

**HEADREST REHAB** HOW TO MAKE 'EM LIKE NEW!



DON'T SCRAP IT, FIX ITE REBUILD YOUR OLD 8.75-INCH REAREND AT HOME! P.22







VOLUME 28 NUMBER 5 MAY 2015

## **CONTENTS**





#### TECH

#### **RESTO CORNER WITH AMD:**

**HEADREST REHAB**This little extra step will bring your Mopar interior restoration to the perfect conclusion.

#### <mark>4</mark> one good turn

Quicken your steering ratio and lose weight by installing a retrofit power steering box from Borgeson.

18 PUSHRODS FOR POWER How to measure and select pushrods for Mopar shaft rocker systems

#### PROJECT CAR

**22 REAREND REVIVAL, PART 2**Restore your original 8.75-inch Mopar rear to better-than-new specs with the right parts and tools. Here's how!

#### **0** THE MOPARS OF SEMA

Classic Chrysler machinery was a prominent force at the world's largest, most important car show. Here's 11 of our favorites.

#### **0** The rest of the best

More killer Mopars from the 2014 SEMA Trade Show in Las Vegas!

**50 36 NEW MOPAR PRODUCTS** 2014 was a banner year for Chrysler power at SEMA. Here's everything Pentastar from the joint.

#### **FEATURES**

**52 FINDING HARMONY**A boyhood dream pushed Paul Lee to do more than he ever imagined, and it's all manifested in this amazing '70 'Cuda.

#### **EPARTMENTS**

<mark>04</mark> bangin gears

**PERFORMANCE CLINIC** 

MOPAR MUSCLE (ISSN 1056-2966) May 2015; Volume 28, Number 5. Published monthly by TEN: The Enthusiast Network, LLC, 261 Madison Ave., 6th Floor, New York, NY 10016-2303. Copyright 2015 by TEN: The Enthusiast Network Magazines, LLC. All rights reserved. Periodicals postage paid at New York, NY and at additional mailing offices. SUBSCRIPTIONS: U.S. and U.S. Possessions \$29.97 for 12 issues. Canadian orders add \$12.00 per year and international orders add \$24.00 per year (for surface mail postage). Payment in advance, U.S. funds only. POSTMASTER: Send all UAA to CFS. (See DMM 707.4.12.5); NON-POSTAL AND MILITARY FACILITIES: Send address corrections to Mopar Muscle, P.O. Box 420235, Palm Coast, FL 32142-0235. Contributions should be sent to Mopar Muscle Magazine, 1733 Alton Parkway Suite 100, Irvine, CA 92606. Manuscripts must meet the criteria of the Writer's Guidelines. For a copy, send an SASE to Mopar Muscle Magazine,1733 Alton Parkway Suite 100, Irvine, CA 92606.

Charger—the hero car from Fast & Furious 7, planned for release the

first week of April. Photo by John

Machagueiro.

# THE SEMA SHOW: IGNITION POINT FOR PASSION

**I built** my first model car kit when I was 7. Santa brought it for Christmas, and my dad helped me put it together. It was some crazy custom thing with headers coming through the fenders, and I got glue all over everything. It was great. When I brought it to Mrs. Booth's second grade classroom for Show & Tell in January of 1970, I was on top of the world. That initial ignition point lit the fire that still burns in me today, but there were many others that followed. I submit to you that there are many ignition points along the way that reinforce and multiply our automotive passions throughout life.

Years later, one of those other ignition points was getting my first "real" hot car. We would laugh at a 225hp V-8 Mustang now, but in 1987, it was pretty hot stuff. For what it's worth, I dug the Mopar equipment of the day, and did try out the 175hp Shelby GLH and GLHS, the 174hp turbo-four Dodge Daytona, and the 197hp Chrysler Conquest TSI "Chiller," but four-cylinder turbo motors and front-wheel drive were deal-killers, so—forgive me—I went with the bucks-down V-8 Ford.

Once I got the keys to my brand-new machine, I became infatuated. I couldn't leave it alone to the point that when I wasn't driving it, I would pop the hood and stare at the engine. Leaving my car for the interior of a building was sorrowful parting, with long forlorn glances over the shoulder. I wanted to live in that thing! There was lots of car washing, polishing, engine detailing, tire shining, interior grooming, and an endless parade of what I now realize were tasteless tack-ons. If there's such a thing as being in love with a machine, I was in love with mine.

Car magazines were a big part of that infatuation—another ignition point—and back in 1987, print was the only way to get information about new performance parts. I read everything I could get my hands on, sponging-up tech stories, car features, events, and ads that featured performance parts. Every once in a while, I'd come across a story on the SEMA convention in Las Vegas—the mecca of new performance parts. When I first discovered it, I remember thinking: You mean all the manufacturers of



There are no "junk" cars at SEMA—they're all top notch, and that goes for Mopars too. Each year, the universe of Mopar parts and projects that debut at SEMA grows by a huge percentage, making it a "must see" for those in the Dodge, Plymouth, or Chrysler aftermarket parts industry.

all the speed parts get together to duke it out in the same place every year with all their crazy new stuff? And on top of that, it's in Las Vegas? Holy crap! I was devastated to learn I couldn't actually go, since it's only for buyers, sellers, and media. That's why when I finally got into the biz in 1991 I did the Snoopy dance. I could finally go to SEMA. This new ignition point would turn out to be one of the biggest perks of the job, and it still is to this day.

I've bought many muscle machines in the intervening years, some of them brand X, and some of them Mopar. Some of them were new, and some of them old—but all of them were ignition points for a growing automotive passion. A lot of water has passed under the bridge since building that first model car and buying my first new hot rod V-8, but I can still say that I'm as infatuated now as I was in 1970 or 1987. By the same token, I'm still a fool for a good SEMA show. I'm not rubbing this in because you can't go, but believe me when I tell you SEMA is like Christmas and your birthday all rolled into one. Anything you could possibly want for your Mopar project is there,

whether it's a classic muscle car or a late-model Hemi.

Look, I don't want to take away anything from other major Mopar events like Carlisle, Mopar Nats, or Moparty At The Strip. Sometimes it's fun picking through miles of swap-meet aisles to do a little automotive archaeology. A lot of vendors work hard to ready their products for those venues, but there is something very different about the *scale* of SEMA. It's not only physically huge, but companies go the extra distance to draw you in, from their displays and handouts to their people and projects. And best of all, it's where all the new stuff debuts.

We have made it our mission this month to bring you every single new Mopar-related product and project car from Las Vegas. We know a magazine can't substitute for actually being there, but just know that we saved you thousands by combing through every square foot of every hall to bring you everything Mopar-related that you're going to see in 2015. Who knows, maybe it will provide one of the hopefully many ignition points in your ongoing love of Mopars. I know it did for me!

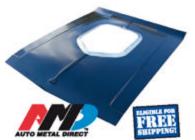
"...SEMA is like Christmas and your birthday all rolled into one. Anything you could possibly want for your Mopar project is there..."



from Summit Racing Equipment. We have almost everything you'll need like restoration components, performance parts, metalworking and fabrication equipment, painting supplies and more,

all but the elbow grease.

Rely on us to answer your questions and recommend solutions 24/7.



Shaker Style Hoods for 1970-74 'Cuda and Challenger

Authentic Look and Fit! Keyword: AMD Shaker Style as low as | \$809.99 each





Deluxe Fuel Line Replacement Kit

Quick-Connect Fittings Saves Time and Money!

Keyword: URR Deluxe Fuel Line URR-KP1500 | \$339.97 kit



Tru-X Stainless Steel Crossover Pipes Balance Exhaust Pulses

for More Performance!

Keyword: MPE Tru-X Universal
as low as | \$99.37 each



95 Series Billet Chrysler Rallye Wheels Light in Weight, Heavy in Style! Keyword: BVI 95

as low as | \$404.97 each



Carpet Kits
Better than OEM!
Keyword: OAM Carpet Mopar
as low as | \$150.99 kit





Boom Mat Moldable Noise Barriers Conform to Your Need for Quiet! Keyword: DEI Moldable as low as | \$49.97 each

ARGENT PAR FREE STEPPENS

Engine Rotating Assemblies More Power per Dollar! Keyword: SCA Chrysler Rotating

as low as | \$1,041.97 kit



Make Restoring and Painting Parts Easier! Keyword: APT Work Stand APT-557003 | \$32.97 each

Expert Advice • Huge Inventory • Fast Delivery • World-Class Customer Service

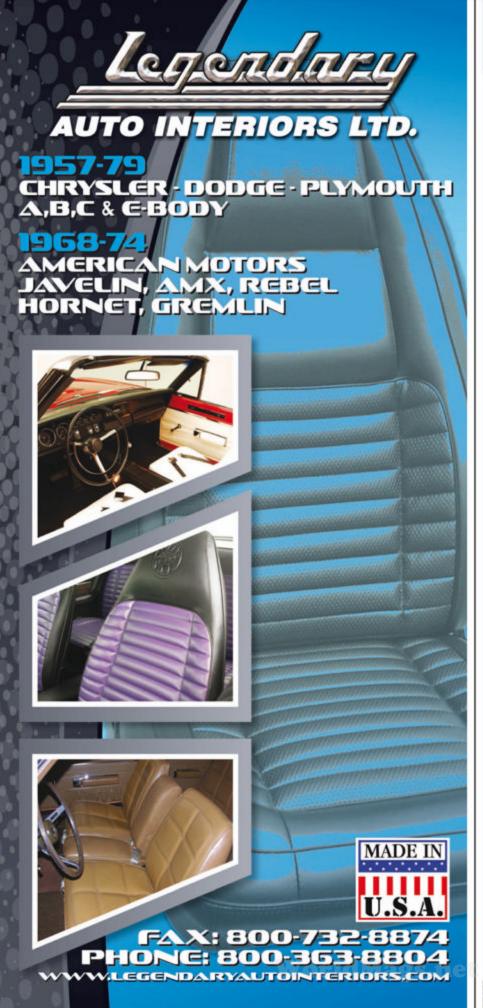
**1.800.230.3030 • Tech: 1.330.630.0240 • Int'l:1.330.630.0230**Call by 10 pm EST: In-Stock Parts Shipped That Day!

Find it at SummitRacing.com

Prices good through 4/1/15 • Typographical, description, or photography errors are subject to correction. Some parts are not legal for use in California or other states with similar laws/regulations.

Please check your state and/or local laws/regulations. ©2015 AUTOSALES, INC. SCode: 1505MP





#### **MASTHEAD**

#### **Mopar Muscle Magazine**

www.moparmuscle.com

#### **EDITORIAL**

Content Director, Muscle Car Group Douglas R. Glad

Editor Johnny Hunkins

Managing Editor Laura Peltakian

Contributing Editors Christopher Campbell, Steve Dulcich,

Mark Ehlen, John Machaqueiro

#### **ART DIRECTION & DESIGN**

Design Director **Markas Platt** Art Director **David Wardrop** 

#### **MUSCLE CAR GROUP ON THE WEB**

www.carcraft.com

www.moparmusclemagazine.com www.musclecarreview.com

#### MANUFACTURING & PRODUCTION OPERATIONS

VP, Manufacturing & Ad Operations **Greg Parnell**Senior Director, Ad Operations **Pauline Atwood**Archivist **Thomas Voehringer** 

#### **ADVERTISING INFORMATION**

Please call MOPAR MUSCLE Advertising Department, (949) 705-3179.
Related publications: Automobile, Car Craft, Chevy High Performance, Circle
Track, Classic Trucks, Diesel Power, Dirt Sports & Off-Road, 8-Lug HD Truck,
Engine Masters, European Car, 4-Wheel & Off-Road, Four Wheeler, Hot
Rod, Hot Rod Deluxe, JP, Lowrider, Mopar Muscle, Motor Trend, Muscle Car
Review, Muscle Mustangs & Fast Fords, Mustang Monthly, Recoil, Street
Rodder, Super Chevy, Super Street, Surfing, Truck Trend, and Vette.

#### SUBSCRIBER SERVICES

For subscription assistance or address changes, email moparmuscle@emailcustomerservice.com, call 800/777-2668, 386/447-6385 (International), or write to Mopar Muscle, P.O. Box 420235, Palm Coast, FL 32142-0235. Please include name, address, and phone number on any inquiries. Occasionally, our subscriber list is made available to reputable firms offering goods and services that we believe would be of interest to our readers. If you prefer to be excluded, please send your current address label and a note requesting to be excluded from these promotions to TBN: The Enthusiast Network, LLC, 831 S. Douglas St., El Segundo, CA 90245, Attn: Privacy Coordinator. Canada Post: Return undeliverable Canadian addresses to IMEX Global Solutions, P.O. Box 25542, London, ON N6C 6B2.

Back Issues: To order back issues, visit https://www.circsource.com/store/store/BackIssues.html

Reprints: Contact Wright's Media at 877-652-5295 (281-419-5725 outside the U.S. and Canada) to purchase quality custom reprints or e-prints of articles appearing in this publication.

MOPAR MUSCLE is licensed to use MOPAR, a trademark of Chrysler Group LLC, in the title of the magazine MOPAR MUSCLE. No other connection with Chrysler Group LLC is expressed or implied. The editorial opinions are those of the publisher and do not necessarily represent the views of Chrysler Group LLC.

Any submissions or contributions from readers shall be subject to and governed by TEN: The Enthusiast Network's User Content Submission Terms and Conditions, which are posted at http://www.enthusiastnetwork.com/submissions/



Copyright 2015 by TEN: The Enthusiast Network Magazines, LLC ALL RIGHTS RESERVED • PRINTED IN THE U.S.A.

#### **ADVERTISING**

General Manager, Hot Rod Network Tim Foss General Manager, Muscle Car Group Ed Zinke Associate General Manager, Mopar Muscle Michael Essex Ad Coordinator Christina Ponce Executive Assistant/Event Coordinator Yasmin Fajatin

WEST

Los Angeles: 831 S. Douglas St., El Segundo, CA 90245

(310) 531-9900

Irvine: 1733 Alton Parkway, Irvine, CA 92606

(949) 705-3100

New York: 261 Madison Ave., New York, NY 10016 (212) 915-4000

Detroit: 4327 Delemere Court, Royal Oak, MI 48073 (248) 594-5999

**MIDWEST** 

Chicago: (312) 396-0620

#### SOUTHEAST

(813) 675-3479

#### SOUTHWEST

(626) 695-5950

To advertise on this magazine's website, or any of TEN: The Enthusiast Network's other enthusiast sites, please contact us at AM-advertising@ enthusiastnetwork.com

#### TEN: THE ENTHUSIAST NETWORK, LLC

Chairman Peter Englehart

Chief Executive Officer Scott P. Dickey EVP, Chief Financial Officer Bill Sutman EVP, Chief Creative Officer Alan Alpanian FVP. Sports & Entertainment Norb Garrett EVP, Chief Content Officer Angus MacKenzie

EVP, Operations Kevin Mullan SVP, Enterprises Tyler Schulze EVP, Sales & Marketing Eric Schwab SVP. Digital Operations Dan Bednar VP, Sales Operations Matt Boice

SVP, Financial Planning Mike Cummings SVP, Automotive Digital Geoff DeFrance VP, Editorial Operations Amy Diamond EVP, Aftermarket Automotive Doug Evans SVP. Content Strategy. Automotive David Freiburger

SVP, Digital, Sports & Entertainment Greg Morrow

VP, Digital Monetization Elisabeth Murray SVP, Marketing Ryan Payne

EVP, Mind Over Eye Bill Wadsworth

#### CONSUMER MARKETING, ENTHUSIAST MEDIA SUBSCRIPTION COMPANY, INC.

SVP, Circulation Tom Slater

VP. Retention & Operations Fulfillment Donald T. Robinson III









### THE POWER GUYS

317-862-3724 indyheads.com

900HP

760 Torque

See all our big block products in our FREE 20 page parts newspaper

#### 400 / 440 ENGINES AND CYLINDER HEADS

500" / 540" Bracketmaster 800HP 690 Torque



4.375" bore 4.150" stroke \$17,715

\$20,195

572" Bracketmaster

930 HP 810 Torque 4.500" bore 4.500" stroke Race gas

500" Street Wedge \$9,745



575 HP 575 Torque 4.150" stroke 850 Holley carb

Available B Block

500" Mod Man Wedge



600 HP 600 Torque

Mod- Man intake

#### On Sale \$3902.00 Indy 440-1 Kit

Complete kit includes heads assembled with: 440-4 rocker assembly 1.5 or 1.6, 440-9K push rod kit, 440-33 complete

gasket set, 400 or 440-6 valley plate, 440-10 external oil kit, 440-11 rocker studs, 440-7 or 8 valve covers, 400 or 440-2 or 3 manifold, 440-11 rocker shafts Now With CNC Chambers

#### On Sale \$2305.00 Indv 440 EZ-1 Kit

The EZ heads are designed for A Body Cars. They have stock low exhaust port location

and bolt patterns. Most all standard exhaust headers will work. This means that if you need Indy power and want to use your existing stock exhaust headers, this is your head! CNC Max Wedge opening 275 cc, intake port 75 cc, Kit includes: assembled heads, valley plate, intake gaskets push rods and head bolts.

#### On Sale \$2095.00 Indy 440 SEZ Kit

The SEZ heads have stock low exhaust port location and bolt patterns. Most all standard headers will work. Stock intake ans exhaust manifolds are a bolt on for



big Indy power. Kit includes: assembled heads, valley plate, intake gaskets, push rods and head bolts.

#### See all our 426 Legend products in our FREE 20 page parts newspaper

#### 426 LEGEND ENGINES AND CYLINDER HEADS

572" Super Street



426 Hemi 2 x 4 Carb

426 Hemi Cross Ram



572" Race Legend



526 Street Legend

Supercharged 950 HP 900 Torque 4.500° bore 4.150" stroke \$22,995

#### 426-1 Legend Kit

Head assembly, shaft clamp kit rocker side shims, manifold bolt kit, spark plug tubes, valve covers and bolts, rocker side springs, push rod kit. 426-2 or 3 manifold.

Indy roller rocker arms, removable valley plate, shaft oil restrictors, head studs, thick wall rocker shafts, tube O rings, complete gasket

On Sale... \$6,675

#### 426-SRK Legend Kit

545 HP

\$20,245

Includes assembled heads with: 2.25 x 1.94 200cc port Indy roller rocker arms Rocker side shims and springs Head studs and manifold bolt kit. Spark plug tubes and O-rings Chrome valve covers Mod-Man choice of tops 1x4, 2x4, 3x2 blower top

Push rod kit and complete gasket set

On Sale... \$5,499

#### Arlen Vanke 426 Hemi

Dominator dual plane intake Low profile for hood clearance

> 820 HP On 572" Super Street

> > \$595.00

#### See all our 426 small block products in our FREE 20 page parts newspaper

360" Magnum MA-X Cast Iron Heads



380 HP 415 Torque 4.020" bore 3.580" stroke 4.995

408" Magnum MA-X Cast Iron Heads



408" Small Block Supercharged



360 LA & MAGNUM ENGINES AND CYLINDER HEADS

725 HP 4.030" bore

\$13,900

415" Magnum MA- X Cast Iron Heads



500 Torque 4.060" bore 4.000" stroke

440" Magnum MA-X Cast Iron Heads 600 HP



550 Torque 4.185" bore 4.000" stroke R3 block

\$10,850

#### Rectangle Port (360-1) Or Oval Port(360-2) Head Kits



Kits include heads assembled with 360-4 rocker assembly 1.5 or 1.6, 360-9K push rod kit, 360-14 rocker shafts, 360-11 rocker studs, 360-3 intake, 360-16 head bolts, head gaskets, intake and exhaust gaskets.

On Sale \$3,535

#### 360-1 Rectangle Or Oval Port Indy Aluminum W-2 Head

Intake port 210cc Exhaust port volume 85cc 63cc combustion chamber Stock valve location Both 360 and W-2 exhaust path

\$1,785 Bare

#### Indy LA-X Cast Iron Head volume 62cc

Intale port volume 179cc

\$1,050 assembled

#### Indy MA-X Cast Iron Head Stock / W-2 exhaust

Std 1.920 x 1.625\* 5/16 stem valves

\$1,050 assembled

#### See Our Full Line Of Engines, Engine Blocks, Head Kits, Rotating Kits, Manifolds And Performance Parts In Our FREE Newspaper



#### BIG DEALS ON STREET OR BRACKET GEN III ENGINES

\$6,995 400 Horsepower 375 Torque New 6.1 short block 5.7 Heads 6.1 Hydraulic roller cam Mod Man 2/4 intake 500 CFM carbs. Hidden coils Firecore wires

Indy cast valve covers Milodon center sump pan MSD complete ignition

New Hemi 6.1 Power Without The Computer!

> Includes "Mod Man" Modular Manifold



Nostalgia Look Street Power

Pump or Race Gas



Big Power And Big Reliability Drag Pack Engines

\$18,500 With Holley Carb



6.1 Hemi Drag Pack Intake \$995

Options, add to the \$6995 price

CNC heads: 435 HP 410 torque. . OEM Front drive kit. . . . . . Six pack carbs. . . Polished valve covers. Black powder coated valve covers...... Custom engraved valve covers. New 535 HP 475 Torque Upgrade. .

Add \$600.00 Add \$1,400.00 Add \$1,040.00 Add \$300.00 Add \$200.00 Arid \$200.00 Add \$3,500,00

Affordable

426 / 6.1 Hemi Drag Pack Bracket Engine 720 HP @ 7400 RPM

605 torque @ 5800 RPM Pump gas or race gas New 6.1 block-ARP studs Compstar crank and rods Diamond pistons 11 to 1 850 Holley carb

6.4 CNC ported heads 2.14 x 1.625 Comp- .584 / .579 - .242 / .248 - HR114 Manley coated valve springs Drag pack intake Indy cast covers - coils under intake MSD ignition

#### See more parts in our FREE 20 page newspaper

#### INDY PERFORMANCE PARTS

#### Mopar World Blocks

4.310 Rough bore 440. 4.490 Rough bore 440. \$2,999 4.500 Finish bore 440. \$2,999 4.240 Rough bore Hemi. \$2,999 4.490 Rough bore Hemi. . . \$2,999 4.500 Finish bore Hemi. . . .

572 C.I. Hemi

Steel crank 4.15 stroke / 8 bolt

4,375 bore Eagle rods

540 C.I. Wedge

Eagle 4340 steel crank 4.500 / 2.2 8 bolt

Eagle rods 7.100 / 2.2

13 to 1 with 75cc

Rotating kit \$2,700

Forged pistons and rings

Eagle crank 4.5 / 2.2

Rings and bearings

Rotating kit... \$2,725

500 C.I. B / RB Wedge

Forged pistons, rings, bearings 10 to 1 compression

Rotating kit ...\$1,925 RB \$2,375 B block

Eagle rods 7.100 / 2.2

Diamond forged pistons 10.75 to 1 with 175cc

360, 440, 400, Hemi Rotating Kits

Short block assembled with Mopar siamese block... \$7,050

Short block assembled w/ stock block ...\$3,695 RB \$3,695 B block

balancing on this kit \$250



Indy Maxx Aluminum Blocks For The 400B, 440 RB, 426

of sleeves, all 5 main caps cross bolted, priority oil main bearings & finished lifter bores, cam bearings & screw in core plugs installed. Std oil pan bolt pattern. dowels and oil gallery plugs supplied, steel billet main caps & finished line hone, 4.500" machined aluminum block, street or bracket race friendly

#### **NEW MOD MAN FOR 400 B BLOCK**

New Mod Man top allows two FAST EZ fuel injectors to be used on any Mod Man manifold Top, gasket and bolts \$149 Single EZ kit...\$1,785 Dual EZ kit .....\$2,680

Hemi OEM Indy Rocker System...\$2384



Includes rockers, shafts, aluminum stands, side springs, side shims

We Make AMC Parts...Call





Short block kit with world block.

Designed for the 1961-1978 Chrysler 383-400-440 c.i.d. 452-906 Upgrad engines. 86-88 cc open chamber design, 185 cc intake port volume. 3 angled valve job 2.14 x 1.81 stainless valves .509" lift valve springs

Umbrella seals 7 degree locks Chrome moly retainers Bronze guides



\$6,495

Add \$1,185 for Callies Crank

383 / 400 / 440 Chrysler \$499.00 Pr Designed for the 1967-1985 Chrysler 318-340-360 c.i.d. engines, 67-70cc open chamber design, 160cc intake port volume. 3 angled valve job 2.02 x 1.60 stainless valves 509" lift valve springs Umbrella seals 7 degree locks

Chrome moly retainers

Bronze guides



Chrysler \$499.00 Pr

#### Check Our Website For **Great Deals On Used Engines** Here's Some Examples

Rebuilt 530" Bracket Master 850 HP Ported 440-1 heads Roller cam Forged pistons 14 5:1

1050 Dominator \$13,995

440-2 intake



402 Cubic Inch Magnum 340 HP on pump gas New cast iron Magnum heads Blueprinted 318 block M-1 single plane intake Mopar electronic distributor

As pictured \$4,795

Only 3 To Sell!

New Indy Hi-PO Head

#### Indy HiPO Aluminum Head



#### **Best Muscle Car** Hemi Head On The Market

2.400 intake valves 266cc intake volume 480 cfm reported Stock parts interchange



5/16 valve stems Stock location exhaust 1 or 2 spark plugs Stock accessory holes



# HEADREST REHAB

THIS LITTLE EXTRA STEP WILL BRING YOUR MOPAR INTERIOR RESTORATION TO THE PERFECT CONCLUSION.



restoring any area of a classic Mopar, it's always the details that separate the just OK jobs from the really nice ones. When thinking about an interior resto, naturally the seat covers, door panels, and carpet come to mind as they take most of the abuse over the years.

Headrests, on the other hand, are mostly (and literally) above the mistreatment that the rest of the interior has to endure. No one puts muddy shoes on them. No one sits on them and, in fact, relatively seldom does anyone ever really rest their head on them. In other words, they tend to hold up fairly well over the decades. That is until you put them right next to a fresh set of seats. That's when the effects of greasy hairstyles, cigarette smoke, and the accumulation of any number of vinyl care products can be clearly seen.

Of course, reproduction units are available, but unless yours have some major damage, you will likely be able to keep your original parts in the car and save yourself more than just pocket change in the process. What's different about restoring headrests is that while they look like the seats, they are really built more like the dashpad. Instead of a slip-on vinyl cover, their vinyl is bonded to a fairly hard foam core and it's not supple like a seat

cover, but much stiffer—almost approaching a feel that's more like plastic.

What that means is that the vinyl cannot simply be replaced. It has to be repaired and refinished. Fortunately, the guys at Muscle Car Restorations have been restoring these for decades and have sorted through all the different products and processes to figure out what works the best.



The headrest on the left is not a new one, but rather the restored mate to the one on the right. Hundreds of dollars can be saved with a little effort and some tips from professionals. That's where Muscle Car Restorations comes in ...



Start by using a non-pointed nonmetal soft tool to lift off the small vinyl cover on the bottom side of the headrest. These are often not salvageable, but you'll want to get it off in one piece if you can so it can be used as a template to cut a new one.



The chrome trim generally comes off with little effort but do be careful not to tear the underlying vinyl.



If a tough spot is encountered, a small amount of an adhesive remover will soften the glue enough to finish removing the trim. Don't rush and risk tearing the vinyl in the channel. Also, do not apply heat to try to loosen the glue as that could cause the vinyl to release from the mold and totally ruin the part.



Muscle Car Restorations starts with PPG DX 330 Acryli-Clean to remove any grease, oil, pot smoke residue, or whatever other vinyl care products may have been applied over the years.



Step two in the cleaning process is to use some Dawn Dish Soap and water, and a small soft bristled brush. Scrub gently but thoroughly, then wipe off with a soft cloth and repeat until the suds wipe off clean. Do not soak the headrest. A larger majority of owners smoked in their cars back then, so you may be surprised at how much dirt will come off. The goal of course is to get it as clean as possible so the vinyl paint can properly adhere.



One might think that the Acryli-Clean would have been enough, but check out what the first pass of Dawn loosened up from the surface. If the vinyl paint doesn't stick like you'd expect, this could be why.



Small scratches are repaired by dabbing in a small amount of Superior Restoration Products Suptex-A into the scratch. It's not necessary to fill the scratch completely as you are trying to match the surrounding texture.

"...they tend to hold up fairly well over the decades. That is until you put them right next to a fresh set of seats."



After about 20-30 seconds, press the Suptex into the crack with a finger. This will push it deeper into the scratch and help it to be more uniform to the rest of the surface. Don't try to overly smooth out the repair as, again, it also needs to match the surrounding texture.

Once dry, the repair can be finished by scuffing the area with a gray Scotch-Brite pad. If necessary, the repair can also be gently wet sanded with some 1,000-grit paper.





After running a gray Scotch-Brite over the entire headrest, a light to medium coat of interior paint is applied, such as Herb's Parts Interior Paint or SEM Color Coat. It is a flexible elastomeric coating designed for vinyl and plastic. Once dry and scuffed with the Scotch-Brite pad again, the final medium coat is applied.



The original bottom piece is used as a template to make a new one from a scrap piece of vinyl. Gasket hole punches are used to make the holes. It can be glued in place with some upholstery adhesive or similar contact type product.

# "Instead of a slip-on vinyl cover, their vinyl is bonded to a fairly hard foam core..."



The chrome trim is actually available at many auto parts stores. It is Cowles Custom Chrome Molding in the 1/4-inch size. It uses a 3M tape so just peel and stick and be sure to leave the seam at the bottom.



The final step is cleaning up the posts with your favorite chrome polish—we prefer Mothers Mag & Aluminum Polish

#### SOURCES

**COWLES PRODUCTS** 

203-865-3110 WWW.COWLESPRODUCTS.COM

**HERB'S PARTS** 

302-376-8508 WWW.HERBSPARTS.COM

**MUSCLE CAR RESTORATIONS** 

715-834-2223

WWW.MUSCLECARRESTORATIONS.COM

**SUPERIOR RESTORATION PRODUCTS** 

800-760-9130

WWW.SUPERIORRESTORATION.COM

TCP GLOBAL (SEM COLOR COAT)

858-909-2110

WWW.TCFGLOBAL.COM

"...it's not supple like a seat cover, but much stiffer—almost approaching a feel that's more like plastic."

# LATE MODEL PERFORMANCE

FIRE UP YOUR LATE MODEL HEMI WITH A SET OF MSD BLASTER COILS

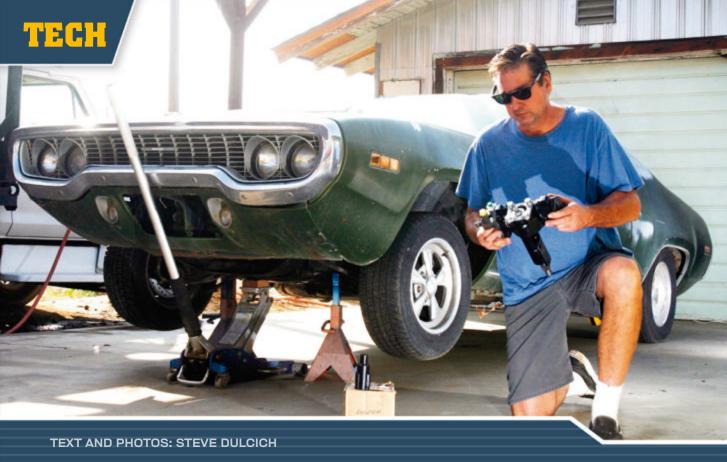
- IMPROVED HIGH RPM OPERATION
- PATENTED WINDING DESIGN AND MATERIALS DIRECT BOLT-IN TO FACTORY CONNECTORS

5.7L HEMI, '03-'05 PN 82568 5.7L/6.1L HEMI, '05-'14 PN 82558

MSDPERFORMANCE.COM TECH LINE: 915-855-7123



+ SOME WorldMags.16£



# ONE GOOD TURN

QUICKEN YOUR STEERING RATIO AND LOSE WEIGHT BY INSTALLING A RETROFIT POWER STEERING BOX FROM BORGESON.

power steering is a frequent subject of derision. This abuse goes back decades, and even old magazine road tests would often cite a lack of road feel or over-assist as the chief complaint. In this day, the complaints still keep coming, and we hear the same criticism about the feel, along with claims that it is too slow, sloppy, and antiquated. Opinions will vary here, but at a 15.7:1 ratio and about 3.5 turns lock to lock, the factory steering really isn't particularly slow. Personally, I've never found the level of assist objectionable—in fact, for the most part I like the original Mopar power steering feel. Sure, the steering can get sloppy after 40-plus years, but generally the sloppiness in an old Mopar steering system is more likely the result of the linkages and

suspension than the box itself, especially if the sector shaft is properly adjusted. Actually, the factory box could be said to be a pretty bulletproof unit.

You might figure I'm a fan of Mopar power steering, and you'd be correct. So, when a new replacement power steering box from Borgeson hit the market for classic Mopars, why would I consider a change? For openers, the sheer bulk and weight of the stock box is enough to make me want it gone. In some applications, bulk alone is motivation, as clearance between the stock box and headers can get tight. Reduced dimensions are certainly welcome in these cases, and sometimes size can be the difference between being able to run a combination with power steering or not. Weight is where the original Mopar power steering boxes look

antiquated by today's standards. There really isn't much to like about nearly 40 pounds of pig iron at the other end of the steering shaft (38.5 pounds to be exact). Here is where the Borgeson box cuts significantly into the heft, with a weight of just 25.5 pounds. With 13 pounds less weight and a ratio of 14:1, the Borgeson box is smaller, lighter, and quicker. Sounds like a hot rod part to us.

#### **PUTTING IT IN**

Replacing the steering box never tops the list of weekend fun with your Mopar. Our recipient car is a '71 Satellite equipped with a 340 engine, and the LA engine in a B-Body is much less punishing than other potential combinations. Even with TTI headers, the box drop was pretty straightforward. We just knocked out the roll pin at the steering shaft coupler, dropped the column, broke the pitman loose from the centerlink, disconnected the hoses, and three steering box mounting

"With 13 pounds less weight and a ratio of 14:1, the Borgeson box is smaller, lighter, and quicker."



Removing the stock box starts under the hood. Begin by disconnecting the pot coupler by driving out the roll pin, then disconnecting the hoses. Loop a length of 3/8-inch hose from the box's inlet to outlet fittings to avoid an oily mess.



The column needs to be dropped to pull the coupling free from the steering box splines. Since the coupling needs to be replaced, the column will need to come all the way out.



The pitman was disconnected from the centerlink—ours popped free with a puller. Three bolts retain the steering box to the K-member.



With our small-block B-Body, the steering box was able to come out from the top without removing the headers. We did need to pull the battery tray and jack the engine to gain the required clearance. These factory boxes are immense.

bolts later it was all on the ground. It did look like the driver-side header would have to come out for clearance, but by removing the battery tray and jacking the left side of the engine, the original box came out the top with the header and exhaust still in place. Our Satellite is equipped with a factory Saginaw power steering pump, which remained in place and received no modifications.

The parts for the swap included the box, a new coupler to mate it with the stock steering column, and the required fittings to hook up the original power steering hoses. The box is a modified Delphi 600 unit, available in both the 1 1/8- and 1 1/4-inch sector sizes used in OEM applications. We went with the small sector version as original on our Satellite, and added a new OEM replacement pitman arm from PST.

The Bergman coupler is a modified OEM-style pot coupler, with an extended spline ring that mates to the Borgeson

box. It comes with a full kit, including new pins, shoes, spring, top seal, and seal cover/retainer. It all goes together just like rebuilding a stock coupler. The box bolts into the factory location in place of the stock piece—a much easier job with its reduced size and weight. With the box bolted up, the pitman and linkage go together just like OEM. The Bergman adapter fittings for the hoses put the hose connections very close to the factory location, so the hoses hooked up perfectly with no modification required. This installation was a simple bolt-in.

#### **DRIVE TIME**

We filled the system with a fresh load of power steering fluid, purging the air by repeatedly turning full lock with the car still on jacks. We could feel a change before the car even hit the ground, with a definite increase in steering input at the wheel. On the ground, the power steering clearly had the "power" part handled, having

no problem swinging the big radials with the car parked. The characteristic zeroresistance "one-finger" steering was gone, but there was no shortage of power assist to get the job done. At rest, it felt just like any modern power steering—equipped car, as we might expect with a modern steering box now in our old Mopar.

On the road, the steering no longer has that detached feel often used to describe the stock system, with a more normal amount of input at the wheel asked for by the steering gear. While the increased feel is nice, the real change is in on-center response. We never really noticed a dead zone right off center with stock steering, but with the new box the steering response is dramatically quicker. Nudge the wheel right or left and the input is answeredlike right now. The new box offers a real increase in steering performance that is immediately apparent. Smaller, lighter, and better performing—this steering box from Borgeson delivers the goods. MM





On the scales we found the factory power steering box (*left*) was 50 percent heavier than the Borgeson box. The new steering gear represents a substantial reduction in dead weight.



Side by side, the reduction of bulk offered by the Borgeson box (*left*) is readily apparent. The added clearance is a lifesaver in tight applications, and makes service easier.



The replacement coupler from Bergman is a variation on the OEM pot coupler with the required length and splines to match the box to the column. The kit contains all-new internal parts as well as the seal.

The coupler assembles to the steering shaft just like the stock parts. Be sure not to forget the fail-safe dowel (stop) pin, which prevents the coupling from pulling apart. We marked the full-in and full-out travel of the coupling on the shaft with a Sharpie as a reference for the installed position.



"The box bolts into the factory location in place of the stock piece—a much easier job with its reduced size and weight."



The box installation was a simple bolt-in, going in just like a stock replacement unit. The shaft coupler is retained by a set screw, and the fasteners to the K-frame are torqued to 80 ft-lb. Torque the big pitman nut to the sector shaft with 175 ft-lb.



Once in place, the Borgeson box looks tiny compared to the stock unit. The factory hoses from the power steering pump fit perfectly to the supplied adapters. We were impressed with the ease of installation, and even more impressed with the improved steering response.

#### SOURCES

BERGMAN AUTO CRAFT

631-423-1517 WWW.BERGMANAUTOCRAFT.COM

BORGESON UNIVERSAL STEERING

860-482-8283 WWW.BORGESON.COM

PERFORMANCE SUSPENSION TECHNOLOGY 877-224-1710 WWW.P-S-T.COM









CARPET

SEAT COVERS

HEADLINERS

FLOOR MATS

DOOR PANELS

CONVERTIBLE TOPS / BOOTS

INTERIOR KITS

EXTERIOR SHEET METAL

FUEL TANKS WEATHER STRIPPING



Starting From \$725
Including Carpet, Seat Covers
& Headliner

# AND MUCH, MUCH MORE TO CHOOSE FROM!

FOR OUR FULL INVENTORY SEE OUR WEBSITE: WWW.dantesparts.com

sales@dantesparts.com



609-332-4194

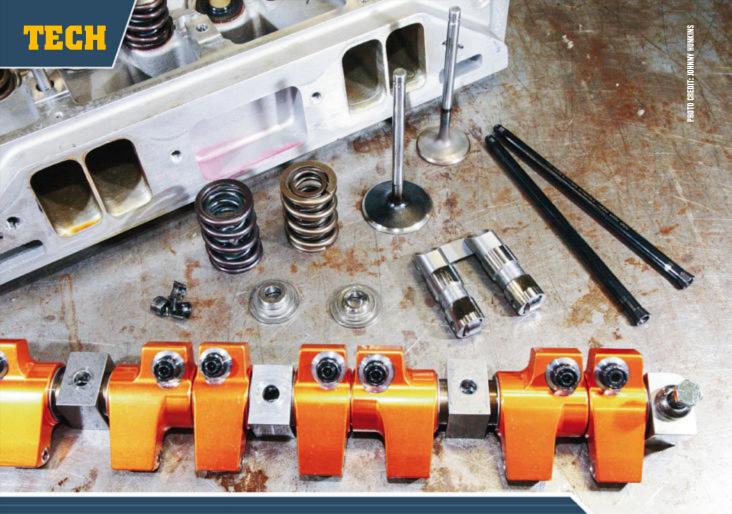
FAX 856-417-3799 Mullica Hill, NJ 08062





WE SHIP WORLD WIDE!

HOURS-EST: MON-THURS 8AM-6PM - FRI 8 AM-5PM - SAT & SUN CLOSED



**TEXT AND PHOTOS: STEVE DULCICH** 

# PUSHRODS FOR POWER

## HOW TO MEASURE AND SELECT PUSHRODS FOR MOPAR SHAFT ROCKER SYSTEMS

of the signature design features of traditional smalland big-block Mopar engines was the simple and effective shaft rocker arrangement. With few exceptions, these were minimalistic setups, featuring stamped-steel non-adjustable rocker arms and solid steel pushrods lined up on a large diameter (7/8-inch) shaft. Lubrication is handily provided by an oil passage coming up from the block, feeding the valvetrain through the hollow rocker shafts. With a hydraulic cam the factory rockers are actually quite effective, owing largely to the light weight and low inertia of the

rocker design, plus the inherent stability of the large slabbed bearing area where the bottom of the rocker met the shaft. All is happy in Moparland until spring loads, high lift, or solid lifters enter the equation.

With high lift and spring loads, the rockers' strength becomes an issue, most apparently at the pushrod socket. Here is the most common failure point of the system, with the pushrod punching through the socket, skewering the rocker. The factory addressed this in later applications, offering heavier-duty rockers with more meat in this area, and even cataloged the heavy-duty stamped rockers

through their performance parts program. While this was a step in the right direction, when stepping up to race-level spring loads, or when requiring adjustability or higher ratios, aftermarket rockers and valvetrains are the requirement.

Since the Mopar shaft system has a fixed fulcrum point, the rocker geometry is fixed by design of the rocker. Unlike the Chevy stud-mounted rockers, pushrod length has zero effect on the rocker-to-valve geometry or the sweep of the rocker at the valve. Think about it, you can bolt the shaft system to a head on the bench and work it with a crowbar (don't do this),



The pushrods required for the job depend on many factors including the block deck, cam and lifter type, and the top end and valvetrain parts. When we swapped this 383 to a set of Indy heads, a new set of pushrods were required.



The way to determine the required pushrod length is to have all the hard parts in hand and measure it directly. Items like the head gasket, which alter the height of the heads, need to be taken into account. We mocked ours up with a used gasket of the same type we will be running in the assembled engine.



Cylinder heads can create a major variation in the required pushrods. These Indy heads are much taller and use much longer valves than production units, so stock application pushrods are not even close.



The type of lifter and cam plays a role here, since the seat height in the lifter varies with the lifter design. These COMP solid lifters have a much deeper seat than a standard hydraulic. Also, the cam base circle diameter figures into the working height of the valvetrain. Rotate the crank to put the lifter being used at the cam's base circle.



To take a direct measurement of the required pushrod length, a checking pushrod kit is used, as well as a large caliper to take the measurement. The checking pushrods are available with interchangeable tips to match your pushrod configuration, and segmented bodies to allow a wide range of check lengths.

and the way the rocker moves at the valve is exactly as it would be in the running engine. The only real consideration related to pushrod length with a stock-style shaft system is getting the valve lash adjuster in the correct range. In the old days when engine variations were far fewer, there were shelf pushrods for hydraulics with adjustable rockers, for solids, and of course for the stock valvetrain. With wide variations in cylinder heads and rocker designs these days, getting the right pushrod length requires measurement.

#### THE RIGHT LENGTH

Mocking up and determining pushrod length is a fairly basic process. In your toolbox you will need an adjustable checking pushrod with the required ends. These tools are readily available from cam suppliers as well as specialty engine tool companies like Powerhouse. You will also need a way to measure the checking pushrod's length—a 12-inch caliper does the job here.

The engine needs to be mocked up as it will run, including the head gasket, as this affects the height of the head. An old compressed head gasket of the same type is best, though you can break out the new one and snug the head down to just seated with a couple of fasteners. Alternatively, if you'd rather not break out

the new gasket, the compressed thickness can be added to the determined pushrod length. Park the cam so that the lifter you are measuring from is at the base circle, and then insert the checking pushrod and bolt on the rockers. Park the lash adjuster in the position it needs to run. Generally, with standard ball-type adjusters on the rocker side, the adjustment here should be with about 1.5 threads showing through the bottom of the rocker body.

An adjuster that hangs well below the rocker body will cost lift because of the increased angle, and will add stress to the adjuster. A pushrod that is too long will run the adjuster too high in the rocker body, and may result in shrouding the cup, foiling lubrication, and leading to smoked pushrods. With socket-style rocker adjusters such as the COMP Pro Magnum, the pushrod oiling is accommodated by an oil band in the adjuster. These should be set so that the oil passage is in midposition.

With everything mocked up, all that is left is to wind out the adjustable pushrod to find the length. With a solid cam, insert a feeler gauge at the lash specification at the valve tip to simulate the required lash. With a hydraulic, the desired lifter preload can be added to the pushrod length once it is determined. Unbolt the rocker and measure the checking pushrod length

with the calipers. Since most adjustable rockers for Mopar shaft systems use cup end pushrods at the rocker side, the depth of the cup must be subtracted from the overall length measured to get the effective length of the pushrod. This is how pushrod length is cataloged for cup-style pushrods, and when ordering custom pushrods be sure to mention to the manufacturer that the length ordered is measured from the ball end to the bottom of the cup end. Repeat and measure the exhaust side separately, since often variation in valve tip height can cause variations between the intake and exhaust.

#### PUSHROD MATERIAL & CONFIGURATION

When shopping pushrods you'll find a variety of available materials and sizes. Factory pushrods were 5/16-inch solid steel while aftermarket units are universally tubular. The solid design was not really stronger, just cheaper to manufacture, and it is obviously heavier. When selecting pushrods for a performance application, the most important aspect is stiffness. The tall decks of Mopar engines result in long pushrods, and long pushrods are more prone to flex than shorter ones. Pushrod flex leads to valvetrain instability, and this can seriously curb high-rpm power.

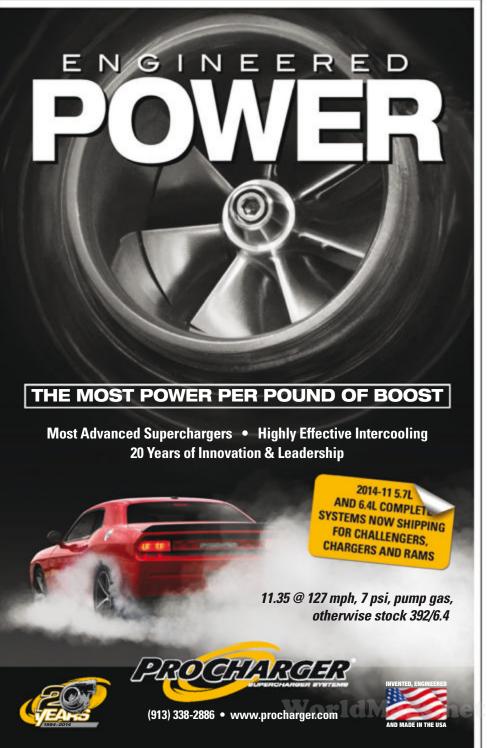
Racing has proven that stiffness is

more critical than weight at the pushrod side of the valvetrain, so it pays to not compromise here. The best way to gain rigidity in a pushrod is by increasing the diameter, however wedge Mopars are typically limited in pushrod clearance. If practical, 3/8-inch pushrods are a better choice than the factory 5/16, but this change will require clearance work in many applications. When clearance is limited and rpm and valvespring loads are moderate, the 5/16 inch pushrod diameter will get the job done. High-strength

material, heat treating, and heavier wall thickness can up the practical limits when retaining 5/16-inch pushrods. A specialist manufacturer can provide information on the appropriate pushrod material for a given application, taking into consideration the cam specifications, spring loads, and rpm requirements. It pays to take advantage of the expertise of specialists in the field.

Custom pushrods are certainly not required in every application. You will find cataloged pushrods in a variety of

configurations that might be right for your application. In ball-end pushrods the field is fairly well covered, with catalog 'rods of various grades typically listed in 0.050-inch increments. Ball/cup pushrod selection is more limited as cataloged units, but often suitable pieces are listed, stocked, and ready to ship. Keep in mind that pushrod length generally isn't an item that needs to be exact to the thousandth of an inch. Take the measurement and check the catalogs and often you will find something that will work.





The valvetrain is mock assembled with the rocker adjuster put into the desired setting and checking pushrod in place. Different rocker bodies can have different pick-up points at the pushrod side, varying the required pushrods; here our rockers are Harland Sharp 1.6:1-ratio units. Typically, a ball adjuster is set with about a thread and a half showing below the rocker body.



With a solid-lifter cam, a feeler gauge takes up the space of the lash to compensate and the checking pushrod is adjusted to remove all slack from the system. With a hydraulic, you can simply measure at the zero lash position and then add the desired lifter preload to the pushrod length.



Remove the checking pushrod and take a measurement of the overall length using the calipers. Be sure the pushrod is square in the jaws for accuracy. In this case, the pushrod measures 8.775 inches.



8.775 - 0.200 = 8.575

The depth of the pushrod cup should be measured and subtracted to get the working length of the pushrod. Add in length to compensate for lifter preload with a hydraulic, or a head gasket if it was omitted from the mock up. Here we arrived at a final length of 8.575 inches after subtracting .200 from the initial 8.775 length.



Since there is often variation between the intake and exhaust side, it pays to go back and repeat the process for the exhaust valves. Ours checked in pretty much identical to the intake side.



#### COMP CAMS

901-795-2400 <u>www</u>.compcams.com

#### FEDERAL-MOGUL, FEL-PRO

662-224-8972

WWW.FEDERAL-MOGUL.COM

#### **INDY CYLINDER HEADS**

317-852-3724

WWW.INDYHEADS.COM

#### **HARLAND SHARP**

440-238-3260

WWW.HARLANDSHARP.COM

#### **JESEL**

732-901-1800

WWW.JESEL.COM

#### **POWERHOUSE PRODUCTS INC.**

800-872-7223

WWW.POWERHOUSEPRODUCTS.COM





# PROJECT CHALLENGER: PART 2 REAREND REVIVAL

RESTORE YOUR ORIGINAL 8.75-INCH MOPAR REAR TO BETTER-THAN-NEW SPECS WITH THE RIGHT PARTS AND TOOLS. HERE'S HOW!

Last month we dug deep into the 8.75-inch rear end assembly from our '71 Challenger R/T project. Like the vast majority of Mopar muscle cars, our 383 automatic Challenger came equipped with the 8.75-inch rear, and like many it was long overdue for a full overhaul. Although I have owned this car since the late 1980s, it was put aside as a future project from day one, so there was little road time to indicate the possible condition of the unit. The temptation was there to just clean it up, apply a fresh coat of paint, and call it good enough. That approach may have worked 30 years ago, but these days it pays to go through everything when involved in a major project.

#### THE PARTS

After teardown, it was clear that a major rebuild was needed. We found shot bearings, age-hardened and worn seals, dry

wheel bearings, and a broken thrust block in the factory cone-clutch Auburn Sure Grip differential. This was going to be a full build. Since we were in it, it was the right time to consider the gear ratio. Because this is an automatic car, and we were after a reasonably stock-appearing restoration, an aftermarket overdrive trans or add-on overdrive were too conspicuously non-original for the build style we were after. With a rebuild of the original 727 as the only real choice, we decided to change to a set of 2.76:1 gears for easier highway cruising. This ratio is not available new from the aftermarket, but fortunately it was produced in significant numbers as OEM and we had a few gearsets in the stash. Our original Sure Grip still had some life left in it, but now was the time to add a fresh unit for years of trouble free service.

For all of our parts needs we went to Randy's Worldwide Automotive, ordering a new Auburn Sure Grip, a complete rebuild kit, and a pair of axleshaft bearing kits. While we were at it, we ordered a crush sleeve eliminator kit, which replaces the crush sleeve in a #489 case with a solid spacer and shim setup similar to earlier 8.75-inch designs. The solid spacer reduces the likelihood of pinion bearing failure under hard use and abuse, and allows the rear to be disassembled without replacing the crush sleeve each time. Our replacement gearset featured the fine 29-spline pinion, rather than the coarse 10-spline of the stock gears, so we also ordered the 29-spline yoke for a 7190 joint.

#### PINION DEPTH AND PRELOAD

Setting up the gears involves several adjustments, the first and most critical of which is the pinion height. This is adjusted by a shim under the rear pinion bearing, and once the bearing is pressed,







Specially formulated to keep highperformance engines cool and clean.

Trust the name that has become a legend in synthetic motor oil technology. AMSOIL delivers the power and performance you demand.

Formulated, blended and packaged in the USA.



The First in Synthetics •

www.amsoil.com/auto

1-800-777-8491



Rapture Challenger VorldMags.net

you are risking bearing damage by removing and reinstalling it. We honed the inside diameter of our used stock bearing to a slip fit for trial assembly. Pinion height can be checked with a special set of measuring tools and fixtures, but if you build the occasional rear, it is hard to justify the expense. Without this equipment you can still successfully build the rear, it will just take longer. The final determination of a proper pinion height is always a check of the gear mesh pattern, so we started with the OEM shim thickness of .030 inch

from the old gearset and moved straight to a mock assembly.

There is no need to install the pinion seal or even the spacer or crush sleeve for mock assembly, just tighten the pinion nut enough to achieve the required preload on the bearings, about 15 in-lb turning torque or where you are feeling mild resistance when turning the pinion by hand. Next, install the carrier and set the backlash (more on that later) and check the pattern. With the correct backlash, the gear mesh pattern is strictly a product of the pinion

height, and the pattern will let you know whether more or less shim is required. The factory service manual gives a good illustration of gear patterns as does the instruction book with the rebuild kit from Randy's. We were lucky and found a perfect wear pattern on the first go-around, so we were satisfied and tore it all down for final assembly.

Final assembly begins with installing the pinion, and in this case we had yet to determine the spacer shim pack to achieve the required bearing preload with our crush





Our kit from Randy's Worldwide Automotive came with bearing, races, shims, and seals—everything needed to rebuild the gear chunk. We added a crush sleeve eliminator kit, axleshaft bearings, a new yoke to match the splines on our pinion, and a fresh Auburn Sure Grip. We began by driving the new bearing races into our cleaned and painted #489 case.



While we had the rear apart, we decided to swap the factory 3.23 gears to a more freeway-friendly 2.76 ratio. This ratio is not available new, but are plentiful from the usual used parts sources. New ring gear fasteners come with Randy's master kit. Note the ring gear bolts have a left-hand thread. We torqued to the factory spec of 55 ft-lb, and then paint marked each as a check.

HerbsParts.com

and over 40 years

of Mopar-specific experience.

sleeve eliminator kit. A good starting point is to measure the length of the used crush sleeve and shim the spacer to match, then install the pinion and check the turning torque. Specifications with new bearings ran between 14 and 19 in-lb rotating torque with the pinion nut torqued to 240 ft-lb. Turning torque is most easily checked with a beam type in-lb torque wrench. If



The kit's Timken bearings are a simple press-fit onto the new Auburn limitedslip differential. Always fixture to press only on the inner race, or the bearing will be damaged.



A shim behind the pinion bearing sets the critical pinion depth. Correct pinion depth is confirmed by checking the gear mesh pattern. For mock assembly, we started with the .030-inch shim from the original gearset, and honed the old bearing to a slip fit in case we needed to change the shim to make an adjustment.



There is no need for a crush sleeve, pinion bearing spacer, or oil seal during mock assembly, just tighten the pinion nut enough to provide running preload in the bearings.

To check the gear pattern, the carrier is installed and the carrier bearing preload and backlash are set to specs. Ours was dialed in to .065-inch of backlash, and we could then check the gear mesh pattern using the gear checking



compound included in our rebuild kit. The pattern will allow us to make an assessment of whether a pinion depth correction is required.



#### "Mopar Is All We Do!"

888-4MOPARONLY STEPHENSPERFORMANCE.COM

#### GET YOUR RESTORATION PROJECT OUT OF THE WEEDS WE HAVE THE WORLDS LARGEST MOPAR SALVAGE OPERATION

Do you need a reliable source for quality used OE parts? We have the world's largest vintage Mopar salvage operation with worldwide shipping. Give us a call for the part you need.



- Body Parts
- Drive Train
- Electrical
- Interior Worldwide Shipping
- Wheels
- Brakes
- Suspension
- Transmission

**Used Parts Sales: 256-247-1332** 

#### INTERIOR AND EXTERIOR A. B AND E BODY PARTS

Sheetmetal Bumpers **Grills And Trim** Lenses And Bezels Electrical Hinges And Hardware Weatherstripping Complete Glass Framerails Suspension Brakes Transmission Console Engine



New Parts Sales: 888-4MOPARONLY Used Parts Sales: 256-247-1332 255 Stephens Performance 9321 Hwy 207 Anderson AL 35610 Email: 4moparonly@gmail.com

the turning torque is too high, more shim is needed; conversely, not enough torque means shim needs to be taken out. It took us several trials before zeroing in on the proper preload. Don't kill the bearings by going straight to 240 ft-lb on the first hit without checking progress, as the preload can be massive if short on shim. You can feel the bearings by rotating the flange holding tool as the nut is progressively tightened. If it starts getting tight well before reaching torque, stop and add shim.

#### **CARRIER & BACKLASH**

With the pinion installed, all that is left is to install the carrier and set the carrier bearing preload and backlash. The backlash is the clearance between the ringand-pinion, and specifications are between .006 and .008 inch, measured with a dial indicator on a ring gear tooth. The preload and backlash are set at the same time and related. The ring gear carrier (differential) rides on bearings at either end, with the races floating in the housing bore. Threaded adjusters bear on the outside

of the races at each side to set their position. Like the pinion bearing, the differential bearings need preload, which is set by the distance between adjusters. Tighten the adjusters towards each other and the bearings will be squeezed together against their races giving preload. To turn the adjusters you'll need a spanner wrench, which can be purchased or made from some scrap steel. While adjusting, have just one cap fastener fully torqued, while the other is just snuggly seated.

Moving the ring closer to the pinion or



# CUT THE CABLE! 1968-1970 B-BODY'S ARE NOW FULLY ELECTRIC!



Cut the cable and get a state of the art electronic system that your Mopar deserves. We now offer our famous PerfectFit Elite systems for 1968-1970 B-Body's... including factory air cars! Plus... with our new and exclusive D.E.R. controls you not only get plug-n-play installation – you get BACKLIT convenience for the first time ever!



www.coolmymopar.com **877.741.8324** 



The pattern will show whether more or less pinion depth is required. Although it sometimes takes a number of trial-and-error attempts to zero-in on the required shim, our pattern looked perfect on the first hit. The carrier bearing adjuster positions were marked for reference to see if anything changes during final assembly.



Satisfied with the gear mesh pattern, we were confident in the shim setting and pulled the gear set apart for final assembly. The new pinion bearing was pressed onto our 2.76:1 ratio pinion.

further away changes the backlash. The adjusters provide for the side-to-side movement. Starting at a position of excessive backlash, bring the adjusters in until the bearings are seated snug in the races, and there is no endplay. Check the backlash at various positions around the ring gear to find the position of least clearance, and make a reference mark of the position. Variation in backlash should not vary more than a maximum of about .002 inch. With the gears in the position found to have the least backlash, move both adjusters evenly

until the backlash is reduced to .0005 - .0015 inch. Now tighten the pinion-side adjuster until backlash increase to the final specification of .006 - .008 inch. This sets the final preload and backlash at the same time. Once the backlash is set, torque the remaining main cap bolt. Our gearset came together with less than .001-inch variation in backlash, at .0065 - .007 inch at various points around the gear. We next rechecked the gear pattern, and it was identical to what we saw in mock-up—right on the money.

#### SHAFTED

The final step in our mechanical rebuild was to replace the axleshaft bearings. The factory setup consists of the retainer/adjuster, the race and bearing, and then a lock ring. We began tearing it down by removing the lock ring. Per the factory process, the ring was staked on the circumference, which loosens the press and allows it to be driven off. We next dismantled the bearings, again using the service manual process of cutting out the bearing cage, notching the inner race flange with



Since we were eliminating the crush sleeve, we had one more aspect of the gears to set up: the shim pack required with the crush sleeve eliminator spacer. Again, this is trial and error; we started with a shim of .030 inch to match the measured length of the used crush sleeve. Several trial assemblies led us to a final shim of .037 inch, which resulted in the correct turning torque and preload.



With the pinion installation completed, the differential carrier was installed and adjusted again for backlash. At the same backlash setting of .0065, the spanner adjusters landed back in the same position as in mock-up, confirmed by our reference mark. The gear mesh pattern was identical to our mock-up results. With the gear chunk completed and adjusted, we finished by torquing the cap bolts to 90 ft-lb and installing the lock tabs.





#### **TECH** | REAREND REVIVAL

a grinder, and removing the bearing rollers, leaving only the inner race. This was done to provide clearance to install a bearing separator. We used a hydraulic press to finish the job and press the race from the shaft.

We found one of the shafts had some serious gouges under the bearing, no doubt from previous improper service. Flawed or gouged axleshafts are prone to failure, so we ended up replacing that shaft. We had spare stock E-Body axleshafts in our parts hoard, but Randy's can supply new axleshafts if required. The axleshaft splines are also prone to wear, and should be carefully inspected. The shafts will need to be replaced if visible



After blasting to bare metal, the housing was cleaned thoroughly and painted in PPG gloss black single-stage urethane using a Harbor Freight Tools touch-up qun.



A new gear chunk gasket was included in our rebuild kit from Randy's. We sealed it with a light bead of Permatex #2, and installed the gearset with the factory correct bare steel deep nuts, torqued to 45 ft-lb.



Removing the factory axleshaft bearings is not a simple press-off deal. We basically used the service manual procedure, starting with removing the lock ring. Staking the circumference with a good cold chisel releases the press allowing the ring to be walked off the shaft by chiseling as shown. Don't shortcut the job with a torch.

spline wear is found. Our shafts looked good at the splines, so we completed the job by cleaning and pressing on a new set of green bearings from Randy's.

#### **FINISH LINE**

We had all of our subassemblies cleaned, painted, and rebuilt, leaving only the simple job of putting it all back together. We painted the housing with PPG gloss black urethane after blasting, and the gear housing received a custom brew of the same in a bare cast steel tint. The axle shaft flanges were similarly finished, as were the stock backing plates for the 10-inch drum brakes. The gear chunk bolts to the housing first, using the factory deep 3/8

NF nuts in bare steel. To help reduce the potential for seepage, we dressed the gasket from our rebuild kit with Permatex Aviation #2 non-hardening sealant. The factory snubber was in good shape, so it was simply refinished in gloss black and bolted in place using phosphated OE bolts. The backing plates were blasted and sprayed with urethane paint mixed to a bare stamped steel tint. We finished by installing the backing plates with the OEM-style rubber-coated steel gaskets, followed by the axleshafts using the gaskets supplied with the bearings. Our revived 8.75-inch rear was looking too nice to hide under our car, but the fully rebuilt unit is sure to provide years of reliable service. MM



After removing the bearing cage, rollers, outer race, and adjuster, we were able to secure a standard bearing splitter to the remaining inner race. Set up in the press, the splitter needs to be well supported or the studs will bend. We used some very heavy angle iron.



With new inner seals installed, the backing plates go on with a rubber-coated steel gasket to the housing ends, then the axleshafts slide into the tubes and engage the splines in the differential. Since we are using the green bearings, there is no endplay adjustment; the retainer nuts are torqued to 35 ft-lb.



Once the axleshafts are cleaned up, installing the replacement bearings is a quick and simple press job. Be sure to slip the retainer plate in position first, and that the bearing is facing the correct direction. We pressed the bearing and retainer sleeves in two separate steps.

#### SOURCES

#### FEL-PRO

662-224-8972 WWW.FEDERAL-MOGUL.COM

#### **HARBOR FREIGHT TOOLS**

800-423-2567 WWW.HARBORFREIGHTTOOLS.COM

#### PPG

WWW.PPGREFINISH.COM

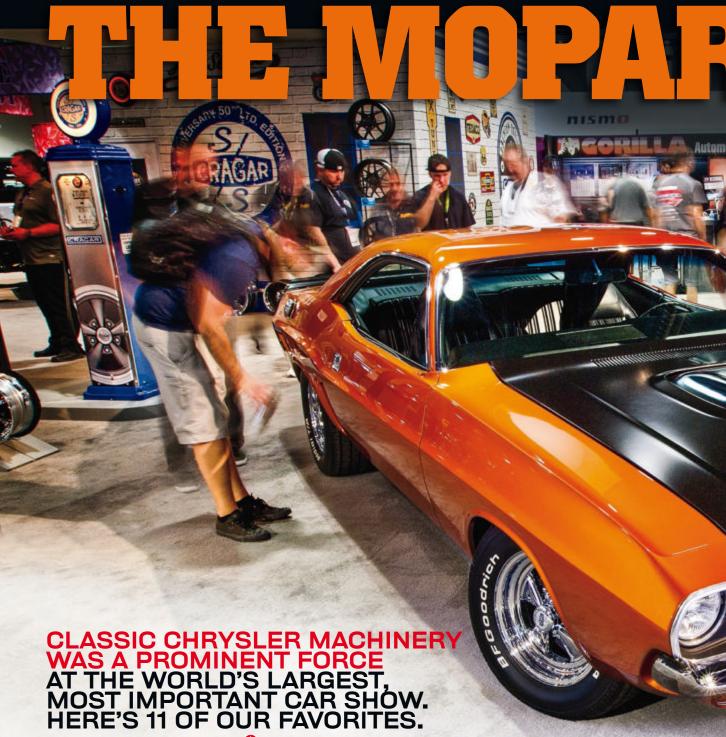
#### RANDY'S WORLDWIDE AUTOMOTIVE

866-631-0196 WWW.RINGPINION.COM



Our 8.75-inch rear looks better than new. The next job is to install it in our Chally with new suspension pieces from PST.



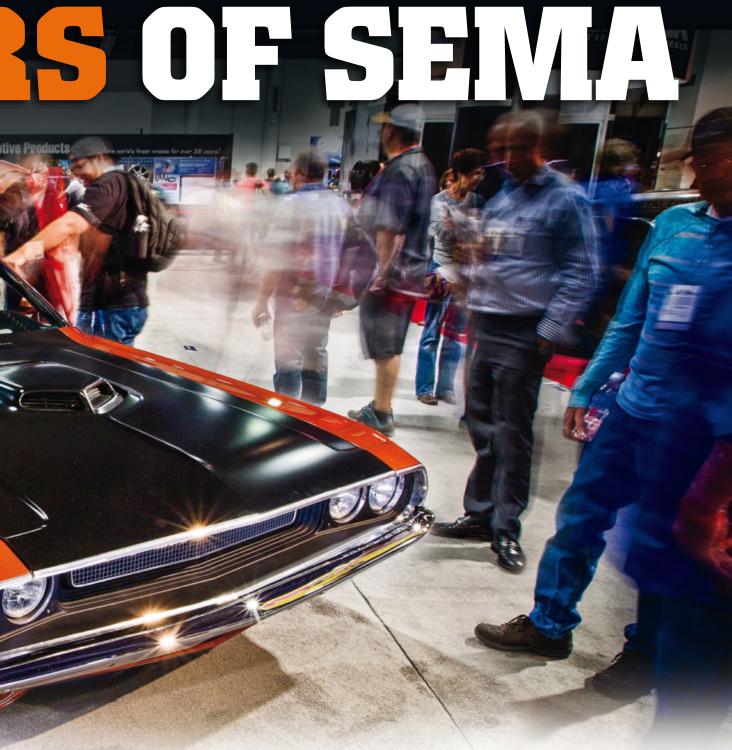


BY CHRISTOPHER CAMPBELL 🗘 PHOTOGRAPHY BY JOHN MACHAQUEIRO

here are great car shows throughout the year, but when a builder or manufacturer wants to debut something truly trendsetting or game changing, they hold onto it for SEMA. The Specialty Equipment Market Association show in Las Vegas is a trade-only show designed to bring manufacturers, buyers, and the media together. The general public is not allowed, except in certain restricted areas, and for the SEMA Ignited after-party

on Friday night. This means it's up to us to sort through the many halls, booths, and promenades to harvest all that good Chrysler content. It's a magical place for the gearheads who have official business, but that doesn't mean it's any less exciting for the machine-head masses. SEMA is like Disneyland, the Emerald City in the *Wizard Of Oz*, and Area 51 all rolled up into one—and that's why we're going to give you a front-row seat to the best Mopars of the 2014 SEMA Convention!

This year the turnout was the largest we've seen in years, in both vendors and attendees, and they brought along their latest builds to show off. The convention center was awash with amazing project cars as well as fresh and innovative products centered on making vintage and modern Mopars faster, more powerful, and more fun. Each year we can count on finding amazing cars that generate buzz and earn accolades, but this year was something special.



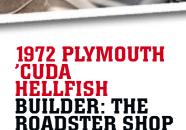
This year the Mopars stole the show. The buzz around the Las Vegas Convention Center centered on the extreme examples of Pentastar performance that quite literally stopped crowds in their tracks. A 2,300hp '68 Charger that's literally 6 inches wider? Yeah, and it's bare metal too. The neverbefore-seen '15 Challenger T/A concept? No back seat, rollbar, track ready. A twinturbo Viper-powered '68 Charger with a completely hand-formed body? You

can't even comprehend how much metal shaping went into this one. A '72 Satellite restored with mostly spray paint? It looks amazingly good on a tight budget. The first stock-bodied car to run 183 mph at Bonneville? Mopar royalty and a history maker from the pre-muscle car era. A '72 'Cuda infused with exotic supercar styling? Slicked-out and obnoxious in all the right ways. The best Day 2–style Hemi Challenger we've ever seen? It's like 1970, but with better parts. A 1,000hp Richard

Petty-designed '15 Challenger? Of course it's Petty Blue. Yeah, all of those were there and then some!

In the endless sea of custom SEMA cars, Mopars made their presence known and cast a long shadow over the competition. We could hardly contain our excitement, but we did manage to keep it together enough to narrow it down to the best 11 Mopars at SEMA, and we present to you the exclusive, up-close photos and details.





The Roadster Shop crew had an interesting challenge with this build: how to blend European exotic and muscle car style into something that honors both, but disrespects neither. We think they did an excellent job.

Phil Gerber at the Roadster

Shop tells us that the owner is a young guy who has always been into European modern exotics, such as Lambos and Ferraris, and he also prefers the high-end tuner style. So when he approached them inquiring about doing a 'Cuda build, the question instantly became, "just how far do we push it?" Unlike Sliced, the thoroughly reimagined Charger, the goal with Hellfish was to actually keep the body within a very stock envelope. In fact, most people assume much more custom bodywork was performed than actually was. Gerber says, they just tucked the bumpers and reworked the valances, shaved and smoothed the body of emblems, trim, and handles, and added a rear ducktail to the decklid and quarters. All that was drenched in PPG Ferrari

"Grigio Silverstone" with matte black hood and accents. That's a short list, but the final effect looks like so much more. The interior keeps the sedate theme running with stock dash and door panels wrapped in leather, a custom center console, Recaro seats, and Spec gauges in a custom dash housing. The end product is an American supercar that not only begs to be driven, but that can push most exotics way back in the rearview mirror.

We know, we're beating around the bush here. The part that leaps out at you first is the most polarizing part of the car: the

wheels. The concave Forgelines wheels are coated in vibrant Transparent Red; something not seen much on the muscle car scene, but is much more normal in the supercar world.

#### FAST FACTS

**ENGINE:** 1,020hp Gen III 6.1L Hemi stroked to a 392ci, twin rear-mount 67mm turbos

TRANS: Tremec T56 Magnum

SUSPENSION/CHASSIS: Roadster Shop Fast Track Chassis with Fast Track IFS, Penske doubleadjustable coilovers, Woodward steering rack, Strange Engineering 9-inch with 3.90 gears and TrueTrac diff

BRAKES: 13-inch, six-piston Wilwood

WHEELS & TIRES: 19x10 and 20x12 Forgeline DE3C with 275/30 and 335/30 Michelin Pilot Super Sport

"The end product is an American supercar that not only begs to be driven, but that can push most exotics way back in the rearview mirror."







#### 1968 DODGE CHARGER SLICED BUILDER: THE ROADSTER SHOP

There couldn't be a more appropriate name for this Charger: Sliced. While the overall iconic Coke-bottle shape of the Charger remains easily recognizable, every single panel on the car is either custom fabricated or seriously

modified. The result is a car that looks much like an artist's rendering of a Charger as if it had been built in homage to the original by a supercar manufacturer. It's not a completely "from scratch" type of build since the Roadster Shop crew did actually begin with a Charger, but everything has been reworked, widened, chopped, and stretched in so many ways that it is as close to a one-off custom body as possible while still being recognizable.

We could fill the whole magazine with the details in this car, but here's just a taste of the sheetmetal sorcery. The front bumper and valance are hand-formed aluminum, as is the hood, which features functional heat extractors. The front fenders were widened and the wheelwells were moved forward 4 inches to minimize the long overhang of the stock car. The body cove at the front fender was exaggerated and formed into a single air extractor. The grille is CNC-cut aluminum, and backed by an elongated honeycomb mesh. To counter the radical style, a subdued Porsche color called "Grau Schwarz" gray was paired with custom mixed matte charcoal accents.

All that show can go too; underneath the custom skin is a full-tube chassis and a suspension based off the Roadster





Shop's IFS and IRS packages, but paired with a Viper centersection in the rear. The interior is as stunning as the exterior, and in some ways even more so. It's all hand-fabricated aluminum from the dash to the door panels and includes a bevy of one-off machined components like the shifter, A/C controls, A/C vents, door handles, gauges and gauge housing.

Despite all of that unbelievable work, and tons more we don't have space to mention, Sliced still manages to look like a Charger.

It's incredibly hard to pick a favorite component since there is so much to like about the build, but we find ourselves drawn to those amazing Greening Auto Company wheels. Recognize them? They're a reinvention of the classic Vector wheel that has become synonymous with Chargers.

#### FAST FACTS

**ENGINE:** Nelson Racing Engines Viper V-10, 1,300 hp at 12 psi of boost, twin 62mm turbos, custom billet intake and valve covers

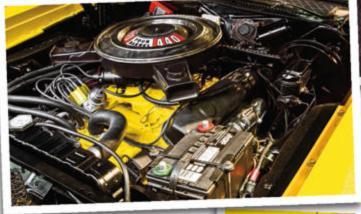
**TRANS:** Tremec five-speed

SUSPENSION/CHASSIS: custom full-tube chassis with custom Roadster Shop Fast Track IFS and IRS with Viper centersection, Penske double-adjustable coilovers

BRAKES: 4-inch, six-piston Brembo GT

WHEELS & TIRES: 19x10 and 20x15 by Greening Auto Company with Mickey Thompson tires





#### 1972 PLYMOUTH SATELLITE VHT SATELLITE BUILDER: VHT

There's really no two ways about it; restoring vintage cars gets pricey in a hurry. With decade's worth of wear, tear, neglect, and general decay on everything, just getting a car back to respectable can be a challenge. Even if you happen to find a project in good running order, the cosmetic restoration can be as spendy as a mechanical one, considering how much reproduction parts cost. So what do you do if you're on a budget, or even worse, faced with a car that has very little aftermarket support? After all, at least 50 percent of hot rodding is getting the look you want.

VHT decided to take that challenge by using their line of products on a '72 Satellite. When the project began, the Satellite was running and driving, but still wearing the original, highly oxidized, patchy light blue paint. The interior was also blue and in the same faded, worn condition. Under the hood, the 440 ran, but looked about as you'd expect from a 42-year-old engine with minimal cosmetic upkeep. To give the Satellite a makeover, VHT stripped out the engine and interior and used their line of spray paints to restore everything from the engine bay, block, and exhaust manifolds, to the dash, seats, door panels, headliner, and carpet. Yes, all of that happened with just paint, including the carpet. It's a good thing VHT documented all of this on their YouTube

channel, because we would've had a hard time believing that interior was once blue. Check out the before and after pics.

In the end, the guys block sanded the body and filled any dings, then rolled it into a budget spray booth built from 2x4s and plastic, and sprayed it in Dulpi-Color Chrome Yellow with Metallic Clearcoat, paired with Jet Black accents. After a little wet sanding and polishing to bring out the shine, the results are quite impressive, especially considering how affordable the whole makeover was.

#### WorldMags.net



**ENGINE:** stock 440 big-block, 4-bbl

TRANS: stock 727 TorqueFlite

SUSPENSION/CHASSIS: OEM

**BRAKES:** stock disc and drum

WHEELS: 18x8 and 20x8.5 Boss Motorsports Style 338



#### ADD 20 HORSEPOWER TO YOUR MOPAR IN MINUTES!

#### TRINITY TUNER & MONITOR:

- Preloaded performance tunes
- · Monitors & logs vehicle functions
- Customizable on-screen gauges
- Checks and clears DTCs
- Programmable LEDs
- Windshield mount included

#### **INTUNE HANDHELD TUNERS:**

- Preloaded performance tunes
- · Log vehicle functions
- · Do it yourself installation
- Color touch screen
- Checks and clears DTCs
- PC and Mac OS X Updates



www.diablosport.com/ads/mopar \*Check website for latest release info 561.908.0041





#### 1964 PLYMOUTH VALIANT VIOLENT VALIANT BUILDER: HOT ROD CHASSIS & CYCLE

Celebrating their 10-year anniversary in 2014, Hot Rod Chassis and Cycle announced the formalization of their "Race Car Division" as the Hot Rod Chassis & Cycle Skunkworks. Though the shop has always been centered around 1964 and earlier hot rods and customs, the race car division has always been a little under the radar. Kevin Tully joked that it was their Skunkworks top-secret stuff that goes ridiculously fast while still keeping the shop's vintage style intact.

The first official car to come from the new HRCC Skunkworks is this '64 Plymouth known as the Violent Valiant (No relation to Reline Gaugework's '69 Valiant, or *Mopar Muscle*'s Violent Valiant '68 Plymouth by the same name). We have to say, we've never seen a second-gen Valiant look so aggressive. But why a Valiant in the first place? Tully explained, "While at autocross and road course events, we noticed that they were dominated by GM cars, a few Fords, and



#### "Taking inspiration from vintage Trans-Am racers of all makes and models, the HRCC team formed a vintage-inspired identity..."

almost no Mopars. We decided that we wanted the first Skunkworks car to be unique." Fair enough, but a Valiant? "Well, it was actually already sitting around the shop," Tully laughed.

Taking inspiration from vintage Trans-Am racers of all makes and models, the HRCC team formed a vintage-inspired identity for the body including a custom lift-off fiberglass hood from VFN with an AAR 'Cuda scoop, a front valence and air dam reminiscent of a Shelby GT350R, and a '69 Camaro rear ducktail spoiler to break up the airflow over the sloping trunk. Underneath the skin things get very serious. HRCC hacked off the subframes and built a full-tube chassis with their own road race suspension.

The interior has a very Trans-Am feel with its array of Stewart-Warner gauges and vintage style warning lights in a custom steel dash paired with stock door panels and low-back seats

#### FAST FACTS

ENGINE: 528ci Indy Maxx aluminum block with Indy EZ-440 heads, K1 Technologies crank and rods, Wiseco pistons, Hilborn EFI-R injection with Holley HP computer and harness, COMP Cams valvetrain, Crane Ignition, distributor, and wires

TRANS: Temec Magnum T56 six-speed with QuickTime bellhousing, McLeod RST twin-disc clutch and hydraulic throwout bearing, Hurst BlackMagic shifter and stick

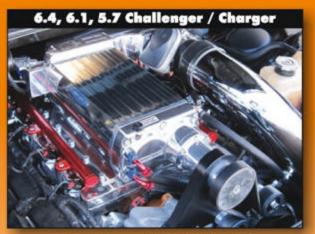
SUSPENSION/CHASSIS: full-tube chassis with RideTech StongArms on HRCC/Skunkworks tubular 4130 cradle, RideTech TQ coilovers with HyperCoil springs, Hoerr Racing 1.5-inch hollow sway bar, and Flaming River race rack up front. HRCC/Skunkworks Mk4 rear suspension with Hotchkis lower links, RideTech TQ coilovers with HyperCoil springs, HRCC 9-inch with Moser aluminum centersection, 3.73 gears, WaveTrac diff, and Moser 35-spline race axles in the rear

**BRAKES:** Alcon 6P race calipers with Hawk pads on 13-inch rotors up front, Alcon 4P in the rear

WHEELS & TIRES: 17x9.5 and 17x11 American Racing 200s with 275/40 and 315/35 Nitto NT05

### Dodge & Kenne Bell Have Something In Common - A BIG HP TWIN SCREW

Instead of the smaller 2.3, 1.9 Roots style used by Ford and GM, Dodge chose the larger displacement higher HP potential 2.4 Twin Screw for their 707HP Hellcat Hemi - the same Twin Screw concept pioneered by Kenne Bell on Fords in 1991 and Dodge in 1997. And for even higher HP and efficiency, all Kenne Bell kits (2.8, 3.2, 3.6, 4.2 and 4.7) include a factory tuned 1400HP rated "real" Cool Air Kit like the old Musclecars - and Helicats.



654 - 1600HP 2.8, 2.8LC, 3.6LC, 4.2LC, 4.7LC AVAILABLE



**NEW HI DENSITY CORE** 22 ROWS

STANDARD CORE 17 ROWS

### **EXCLUSIVE HI DENSITY INTERCOOLER**

Bigger and more is better. 20% larger Kenne Bell Hi Density intercooler concept uses 30% more cooling rows and fins for increased cooling efficiency



Coming Soon 3.6L 901HP HELLCAT

BUY FACTORY DIRECT FACTORY DIRECT SALES, TECH SUPPORT & SERVICE

10743 Bell Court Rancho Cucamonga, CA 91730 Phone (909) 941-6646 • Fax (909) 944-4883



www.kennebell.net



### 2015 CHALLENGER 392 SCAT PACK RAPTURE BUILDER: RM MOTORSPORTS

No matter how long the build time line, so many SEMA build stories end with everything coming right down to the wire with barely enough time to get the car to Las Vegas and loaded into the show. That was compounded with the AMSOIL-sponsored Rapture Challenger since there was an extremely short amount of time to make the build a reality, only a couple of months.

Keep in mind the Rapture is based off the '15 Challenger, a 392ci Scat Pack model, no less. In fact, it was only the second car off the assembly line. When Chrysler put the word out that it was going to donate this car for a SEMA build, 50 shops jumped at the chance. The winning design proposal was submitted by Pfaff Designs and Downforce Motorsports and they took delivery of the Challenger in September. That left about six weeks to finish it before the 2014 SEMA show in November.

Built specifically to be an Optima Ultimate Street Car Association competitor, Pfaff's design is a mix of vintage and modern visual themes. Though the overall look is definitely Trans-Am and modern rally and road-race inspired, the aggressive paint scheme

is actually a nod to the "Candymatic" paint schemes used by the Ramchargers on their record-breaking Dodge Super Bees. Also designed by Pfaff, the PPG waterbourne Plum Insane tint sprayed by That's Minor Customs is an amped-up Plum Crazy Purple.

The stock Challenger's aggression is dialed up already thanks to the Scat Pack, which has a more aggressive front splitter and decklid spoiler, but RM Motorsports crafted an even more aero package to push the Challenger into the road at top speed, and added hood heat extractors and unique front air ducts to complement the Hella lights. Underneath, an Air Lift Performance air suspension adds cornering prowess while lowering the Challenger's center of gravity.

As for the name, Pfaff says he looked for something that was as genre-busting as the "show car meets street car meets race car"

that he wanted the Challenger to capture. Blondie's 1981 hit Rapture came to mind since it changed the way many people viewed the established rules.

### **FAST FACTS**

**ENGINE:** stock 485hp "Apache" 392ci Hemi with shaker, Kooks headers

**TRANS:** Tremec T6060 six-speed with McLeod RST Street Twin Clutch and Barton Industries shifter with Flat Stick

**SUSPENSION/CHASSIS:** Air Lift Performance suspension with Petty's Garage front and rear sway bars and tower braces, Speedlogix rear control arms, and sway bar endlinks

**BRAKES:** stock Scat Pack Brembos

WHEELS & TIRES: 20x9.5 and 20x11 Forgeline RB3, 275/40 and 315/35 Nitto NT05

"...the Rapture is based off the 2015 Challenger, a 392ci Scat Pack model, no less. In fact, it was only the second car off the assembly line."



makes the best-fitting reproduction panels on the planet.



(866) 684-5942 www.autometaldirect.com





While it sounds unreasonable for a street car, Nelson Racing Engines has become known for creating four-digit horsepower twin-turbo engines that are actually surprisingly driveable on the street, thanks to lots of tuning and real-world testing, along with the ability to adjust the power in-car from 600 to 2,000-plus, thanks to controllable boost and dual-octane fuel systems. That's not just a one-off deal either; NRE sells those engines as packages to drop into your dream machine. Well, "drop-in" is a bit liberal considering the packaging requirements, but if you need help there, NRE can also provide the dream machine too via the Nelson Supercars side of the business.

This extreme, yet surprisingly subtle '68 Charger is one of those dream machines. The unbelievably straight bare steel body is impressive, but it's even more so if you realize how much modification has been performed. Most notably, the whole car is 6 inches wider. Check out that upper body line to the window frame; no standard Charger is that beefy. Also, note that the quarter-panel endcap is part of the body rather than a separate piece, and how tight those bumpers are to the body. We'd love to point more modifications out, but Nelson and his crew blended old and new steel together so seamlessly that without a stock Charger sitting beside it, it's almost impossible to discern the changes. Seriously, you cannot find a trace of weld or splices anywhere; every panel truly looks like it was one piece of stamped panel. How much work does that take? Over 2,000 hours to date, and it's still not ready for the coat of clear that will suffice as paint. "I have to give credit to my crew," Nelson said. "I have rounded up some of the very best metal craftsman in the country to work on this car."

Maximus actually had its street debut just a few months before SEMA, as well as its big screen debut; it's one of the hero cars in the upcoming *Fast* 7 movie. While it's still in the shakedown stages, once Maximus is complete it should be capable of 8-second quarter-mile times and a top speed of 200 mph.

"Maximus actually had its street debut just a few months before SEMA, as well as its big screen debut; it's one of the hero cars in the upcoming Fast 7 movie."

### RATE AT MINES

**ENGINE:** 2,000hp all-aluminum 9.4L Hemi with Nelson twin-turbo system

TRANS: Tremec T56

SUSPENSION/CHASSIS: custom coilover front suspension with extra tall forged drop spindles, splined sway bars, and triangulated four-link rear suspension with adjustable instant center

BRAKES: Wilwood six-piston front and rear

WHEELS & TIRES: custom solid billet wheels with Mickey Thompson tires for now. Full slicks for testing

SUPER COUPON

### **How Does Harbor Freight Sell Great Quality Tools** at the LOWEST Prices?

We have invested millions of dollars in our own state-of-the-art quality test labs and millions more in our factories, so our tools will go toe-to-toe with the top professional brands. And we can sell them for a fraction of the price because we cut out the middle man and pass the savings on to you. It's just that simple! Come visit one of our 550 Stores Nationwide.

IT1 - Save 20% on any one item purchased at our stores or Harborf-reight.com or by calling 429-2367. "Cannot be used with other discount, coupon, grit cards, inside track 429-2367. "Cannot be used with other discount, coupon, grit cards, inside track articles are stored to the store of the

ER COUPO WITH **ANY** PURCHASE PITTSBURGH 1" x 25 FT **TAPE MEASURE** 

### 2500 LB. ELECTRIC WINCH WITH WIRELESS REMOTE CONTROL BABLAND 2500 BAGLAND LOT NO. 68146 61258/61297/61840 **REG. PRICE \$149.99**









THE HARD THE THE THE THE SECTION TO THE

TON FOLDABLE

SHOP CRANE

LOT NO. 69514/60388 Item 69514 shown









- 100% Satisfaction Guaranteed
- Over 25 Million Satisfied Customers
- No Hassle Return Policy
- Lifetime Warranty on All Hand Tools
- 550 Stores Nationwide
- HarborFreight.com 800-423-2567

2.5 HP, 21 GALLON

125 PSI VERTICAL

AIR COMPRESSOR

CENTRALPREUMATIC

REG. PRICE \$258.09

REG. PRICE \$3.99



### 1970 DODGE CHALLENGER LESS IS MORE BUILDER: PURE VISION DESIGN

Pure Vision Design actually had three cars on display at SEMA, all of them on 15-inch wheels. One was a vintage-style racer, but the other two, including this Challenger were remarkable for their *lack* of custom parts. In fact, this Challenger may very well have been the mildest vintage car in the entire show.

That doesn't mean it lacked for attention, though. It actually had a ton of feedback, way more than builder Steve Strope ever expected. He heard nothing but positive reviews and stories about cars people remembered from their youth. It's that kind of car.

Notwithstanding, don't mistake it for a restoration with some Cragars on it. Strope's version of Day 2 focuses on choosing the right modern equipment to augment a nostalgic car and make it even better than they were without changing the vibe. For example, the body is stock other than the '71 sidescoops, but that color is actually '11 Charger Toxic Orange Pearlcoat. It looks so surprisingly era-appropriate that we didn't even question it. The Hemi is actually a mild stroker to make good torque, but has a small cam for easy driveability. The stock-appearing engine bay has throwbacks like the ACCEL Super Coil and Super Stock wires, but also a Billet Specialties Tru Trac system to spin modern accessories, like the Vintage Air compressor. Underneath, the chassis benefits from a full bolt-on Hotchkis suspension package. Inside it looks completely stock other than the B&M shifter, but there is a hidden stereo with speaker holes drilled in the door panels. Everything has been Dynamat covered for isolation.

"It's cool to have all the high-dollar extreme stuff, but it's just not necessary to have a cool car," Strope told us. "You can take advantage of all the über Pro Touring nonsense and subtly integrate it into a stock-appearing car. You don't have to be on track with it to enjoy it; you can have a throwback street machine, it doesn't ruin the vibe, and will drive better than they ever did. Not everything has to be a watershed car. It's not trying to be, it's just a nice car." We guess that just shows the power of checking the right boxes.

"You can take advantage of all the über Pro Touring nonsense and subtly integrate it into a stock-appearing car. You don't have to be on track with it to enjoy it..."
—Steve Strope



### FAST FACTS

ENGINE: 472ci Hemi, ACCEL Super Coil and Super Stock plug wires, Billet Specialties Tru Trac accessory drive

TRANS: A727 three-speed automatic with Gear Vendors overdrive

SUSPENSION/CHASSIS: Hotchkis TVS system minus subframe connectors, Firm Feel steering box, Dana 60 with 3.55 gears

**BRAKES:** stock discs and drums

WHEELS & TIRES: 15x6 and 15x8 Cragar S/S wheels, 215/65 and 275/60 BFGoodrich Radial T/A





WE HAVE THE RIGHT TIRES & WHEELS FOR YOUR MOPAR!



COLMEO

Purchase a complete set of tires and wheels of your choice and have it mounted, balanced and NITROGEN filled for FREE! **Over a \$100 Value!** 



BFGoodrich Silvertown Redline Radials Starting at \$199



BFGoodrich Radial T/A (over 20 sizes!) Starting at \$91



Firestone Wide Oval Starting at \$205



Pro-Trac Performance Tires (Perfect for Pro Street cars) Starting at \$158



M&H Cheater Slicks Starting at \$205



M&H Drag Radials Starting at \$215



Magnum 500 Starting at \$164



Mopar Rallye (Also available in Chrome!) Starting at \$108



Mopar Standard (15x4 sizing now available!) Starting at \$111



Rocket Strike
Starting at \$190



Rocket Injector
Starting at \$190



Rocket Fuel
Starting at \$190





### 1970 PLYMOUTH SUPERBIRD A BIRD WITH MORE BITE BUILDER: RESTORATIONS BY JULIUS

Yet another near-stock Mopar that stopped us in our tracks was this '70 Superbird in the Hotchkis booth. As highly as most Mopar lovers regard these cars now, it's amusing to remember that in 1970 they were considered a bit extreme for the average muscle car buyer. Many of the 1,920 Superbirds built in 1970 to pass NASCAR's new homologation rule of one car to be sold for every two manufacturer's dealers in the United States, were hard to sell. In fact, some were converted back to '70 Road Runners just to move them; and of those that kept their aero work, quite a few lingered on the lot as long as 1972.

Considering that the only reason the street-legal versions of the Plymouth Superbird—and its sibling the Dodge Daytona—even existed was for NASCAR racing, it's odd to think that they need help in the handling department, but it's oh so true. While the racers had serious suspension packages, the street cars were essentially the same Road Runner package underneath. Not terrible for its day, but certainly lacking now.

This particular 440 six-pack Superbird was a product of West Coast Mopar restoration expert Julius Steuer of Restorations by Julius. Known for his meticulous detail and for being a real

stickler for OEM correctness, the fact that Steuer was willing to bolt on Hotchkis' Total Vehicle System (TVS) to such a rare and coveted street machine says quite a bit about both the quality and ease of installation of the parts. You can

be sure he wouldn't go beyond pure bolt-on parts for a car like this. The TVS package nets new and larger diameter sway bars with poly bushings, heavier-rate leaf springs, subframe connectors, and geometry-corrected A-arms with improved caster/camber angles. To give it a Julius touch, though, all the parts are somewhat disguised for a stock-ish look. The result is a very correct looking and feeling Superbird that will be much more enjoyable to drive. Hotchkis was so pleased with the result that the theme

of the booth was "Time Machine." It asks the question, what if the Superbird had come factory-equipped with Hotchkis suspension and adjustable shocks?!

### FAST FACTS

ENGINE: 440ci Six Pack

**TRANS:** A727 TorqueFlite three-speed automatic

SUSPENSION/CHASSIS: Hotchkis TVS

BRAKES: OEM disc and drum

WHEELS & TIRES: 15x8 and 15x10 Wheel Vintiques Mopar Rally with 235/60 and 275/60 BFGoodrich Radial T/A

"It asks the question, what if the Superbird had come factory-equipped with Hotchkis suspension and adjustable shocks?!"

### FOR YOUR CLASSIC MOPAR



NOW AVAILABLE

S-Drive Serpentine **Pulley Kits** 

for 383-426-440 Mopar One part number gives you everything you need to accessorize your engine with American made billet aluminum and new, name brand components



Billet Aluminum **Hood Hinges** Available for 1967-1970 B Body



1-888-813-1293 > Click: www.EddieMotorsports.com 11479 Sixth St., Rancho Cucamonga, CA 91730

www.facebook.com/eddiemotorsports





Available

### ROSEVILLEMOPARTS.COM THE BEST DEALS ON RESTORATION **PARTS CAN BE FOUND HER** Interior Worldwide And Shipping

Michigan's Largest Mopar Restoration Parts Dealer

### Save Up To \$425 On Our E Body Interior Package



Exterior





### Sheetmetal And Panels



Quarter Panels Fenders Valences



Hoods and Trunks Door Skins & Shells Filler Panels

Hardware, Hinges And Scoops

### Floor And Trunk Panels





Full Trunk Floors Half Trunk Floors

Full Floor Pans Half Floor Pans Shifter Tunnels Supports, Brackets And Braces

Let One Of Our Sales Engineers Price Out A Money Saving Package With Everything You Need

### **Grilles Bumpers And Bezels**





Headlamp Bezels Headlamp Ring Sets Front And Rear Bumpers



### Interior Trim And Seat



Instrument Bezels Interior Chrome Consoles Dash Vents Knob Sets Seat Belt Kits Seat Belt Clips Hardware

### Door Panels And Armrests





We Carry A Full Line Of Door Panels, Arm Rest Pads, Trim And Hardware For A. B. E.

25800 Gratiot Ave. Roseville MI 855-721-7673 586-859-2613



### 2015 DODGE CHALLENGER T/A CONCEPT BUILDER: MOPAR PERFORMANCE

Mopar Performance came on strong this year at SEMA with several performance cars to get the faithful frothy over the future. This Sublime Green Challenger represents a serious street fighter package that is a very real possibility for showrooms. Dipping into the parts bin for both production and factory performance bolt-ons already available, the T/A pays homage to the original 1970 version we all love so much, specifically Sam Posey's #22 Challenger. The color palette of Sublime Green and matte black is the most obvious nod, but the rest of the upgrades are all about function. If you're into stripped-down,

no-nonsense muscle cars, this is your Mopar. Mopar Performance says that the race-inspired design will focus on weight reduction as well as increased chassis

rigidity and a more visceral driving experience. As we go down the list making up the T/A package, it reads exactly how we'd want Dodge to build one: 392ci Hemi, Viper-inspired SRT hood with hoodpins and functional cold air induction, air dam and splitter, Gurney Lip rear spoiler, Air Catcher headlights, lightweight 20-inch Hellcat wheels with sticky 295-series tires, D-shaped Mopar steering wheel, carbon-fiber race seats with harnesses, rollbar, front and rear strut tower braces, front and rear coilover kit, upgraded sway bars, rear seat delete, Pistol-Grip shifter, 180-mph speedo, side-exit exhaust, and Brembo six-piston calipers. Yes, build it exactly like this, please.

Currently the T/A is just a concept, but as far we can see, there's no reason it couldn't be a reality in short order. Maybe if we all make enough noise, Ma Mopar will hear us and make the Challenger T/A an orderable reality.

"As we go down the list making up the T/A package, it reads exactly how we'd want Dodge to build one..."

ENGINE: 392ci "Scat Pack" Hemi with shaker cold-air induction

TRANS: six-speed manual

SUSPENSION/CHASSIS: four-point rollbar, front and rear strut tower braces, front and rear coilover kit, upgraded sway bars

**BRAKES:** four-piston Brembo

WHEELS & TIRES: 20x9.5 Hellcat with 275/40 Pirelli P Zero Nero







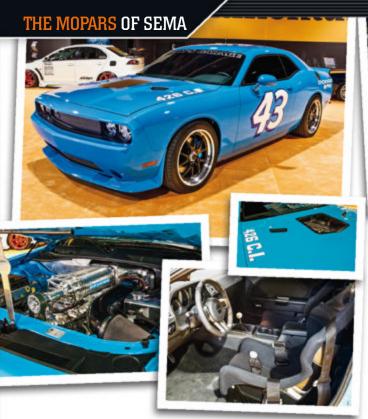
LET US DO THE HARD PART FOR YOU. IN PART OR WHOLE, MAKE US YOUR FIRST CHOICE FOR INTERIOR RESTORATION. SOME OF OUR SERVICES INCLUDE:

- \* GAUGE CLUSTER RESTORATIONS
- \*TURN-KEY DASH RESTORATIONS
- \* PLASTIC CHROME PLATING
- \* ASHTRAY & HEATER CONTROL RESTO'S
- \* RADIOS REBUILT OR FM CONVERSIONS
- \* CONSOLE & STEERING COLUMN RESTO'S
- \*COMPLETE IN-SHOP INTERIOR RESTO'S

\*WE OFFER THE FINEST INTERIOR, COMPONENT RESTORATION SERVICES AVAILABLE ANYWHERE, CHECK, US OUT ON THE WEB TODAY!

INSTRUMENT L.SPECIAL

65 FOLIAGE DRIVE N. KINGSTOWN, RI 02852 TEL, 401-267-0055 WWW.INSTRUMENT-SPECIALTIES.COM



### 2014 SRT DODGE CHALLENGER 50TH ANNIVERSARY PETTY CHALLENGER BUILDER: PETTY'S GARAGE

To mark one of the most significant anniversaries in the Mopar world, the 50th anniversary of the debut of the 426ci Hemi, Petty's Garage (PG) decided to build the ultimate version of one of their specially prepped new Challengers. Beginning with a '14 SRT, PG essentially threw their entire catalog of exclusive parts at the car to create something that can impress on all fronts.

Of course the most obvious changes are the custom BASF Petty Blue paint paired with PG knock-off Forgeline wheels, custom stainless mesh grille, and Gurney Lip rear spoiler, but the fully polished Whipple 4.0 supercharger peeking through the clear plexi in the center of the hood is what had people most excited. That monster blower sits atop a third-gen Hemi, which, of course, displaces 426ci, and huffs out enough boost to bring output to an honest 1,000 hp.

Having 1,000 hp in a Challenger is good, but it also means you need to upgrade everything else to handle the brute force. PG beefed up the driveline with 1,400hp axles, an aluminum driveshaft with a safety loop, and a McLeod clutch. For handling, a PG tubular K-member was outfitted with adjustable coilovers, adjustable sway bars, and poly bushings. PG wants customers to really use these cars, so inside it gets a PG rollcage, rear seat delete,

Sabelt carbon-fiber race seats and harness, and Spec NASCAR gauges on the A-pillar. We didn't get a chance to hear it run, but with Kooks long-tube headers and that NASCAR boom tube side-exit exhaust pipe, you can be assured that it will make its presence known.

### **FAST FACTS**

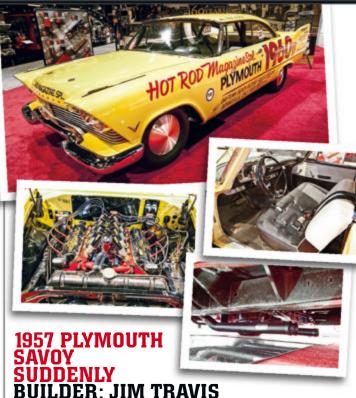
ENGINE: 1,000hp aluminum 426ci Gen III Hemi with forged rotating assembly and Whipple 4.0 supercharger, PG air intake

**TRANS:** Tremec TR6060 six-speed manual with McLeod clutch and Hurst shifter

**SUSPENSION/CHASSIS:** PG tubular K-member, adjustable coilovers, adjustable sway bars, poly bushings, rollcage

**BRAKES:** four-pistom Brembo

WHEELS & TIRES: 20x9.5 and 20x10.5 PG Forgeline knock-offs with 275/40 and 315/35 Continental ExtremeContact DW



We included Suddenly in our list just because we love this unique car and its history so much, but we recently learned from the guys at Hedman Hedders that its story isn't over. Back in 1957, it was announced that the eighth annual NASCAR International Safety and Performance Trials would include an Experimental category for standing and flying mile record runs on Daytona beach. Intended as a class for the OEMs, it also allowed for privateers. Wally Parks and Ray Brock at *Hot Rod* magazine jumped at the chance and managed to pull some strings and "borrow" a new '57 Savoy. At Dean Moon's shop, a Hilborn-injected 448hp 392ci Hemi originally intended for a dragster was dropped in, a rollbar was installed, as well as Firestone racing tires, and Bob Hedman built a set of headers. All that happened in the space of two weeks, and the *Hot Rod* magazine SpcI was dubbed "Suddenly," in reference to the '57 Plymouth ad campaign, "Suddenly, it's 1960."

At Daytona, Suddenly ran a best of 166.898 mph with a two-way average of 160.175 mph to beat the OEMs and set a class record. Later at Bonneville with 70 percent nitro in the tank and a special additive, Suddenly ran a best of 183 mph in an attempt to set the D/Fuel Coupe and Sedan record, but the engine let go. They didn't get the record, but Suddenly had gone faster than any stock-bodied American car and in the process showed what hot rodders could do.

After that, Suddenly went into daily driver service, eventually being sold, and was lost to time. In 1995, Parks decided to build a clone and enlisted original builder Jim Travis. This first clone was almost identical, except it was a two-door sedan, as a suitable hardtop could not be found. At the 1995 USFRA World of Speed, Travis drove the clone to a 147mph pass but tuning issues prevented additional runs. Later, Parks made 131mph passes at El Mirage and Muroc. Brock was never satisfied with the sedan,

so he tracked down a hardtop and had Travis transfer all the parts from the sedan. Clone number two has spent most of its life on display in the Petersen Automotive Museum or the NHRA Motorsports Museum—until this year, that is!

### **FAST FACTS**

**ENGINE:** 392ci first-gen Hemi, Hilborn injection, E85 fuel

TRANS: four-speed manual

**SUSPENSION/CHASSIS:** OEM plus Traction Master bars

BRAKES: OEM

wheels & Tires: Firestone 7.10/7.60-15 on stock wheels up front, 8.90-15 in the back on widened wheels

### 1-800-488-6057

100% Satisfaction guaranteed!

### 0 8

SAME DAY BUY TWO ITEMS SAVE 10%



(it - Part #8055 d Kit - Part #8040











2008-2015 T/A Hood with Painted Matte Black Scoop - Our T/A Hood includes a functional Cold Ram Ar Kit which 2008-2015 includes a 9" Conical Air Filter. The Ram Air System is dyno proven to add up to 15 HPI Part #8045.........\$1,599.99 2008-2015 Pedestal Wing - Part #2219 C440 Wing - Part #2220

3656 N. Mill Rd., Vineland, NJ 08360

DON'T FORGET TO SUBSCRIBE TO OUR NEWSLETTER FOR SPECIAL OFFERS!





affe black & silve





### D OR ROAD RACE...

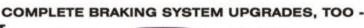
### ALTERKTION COIL-OVER SYSTEM

The RMS complete suspension systems do more than save weight and add clearance. They're designed with precise geometry for optimum control, even when you touch down from high wheelstands or hit the brakes from 8-second speeds. Easy to install and work with, the Alterktion system bolts up to factory frame rails. Complete from connection to steering column down to the spindles. Engine mount options include complete mounts to block, all are poly bushed spool-type mounts. Powder coated gloss black and ready to install.

### STREET-LYNX REAR SUSPENSION SYSTEM

Get rid of your poor-performing leaf springs with RMS' Street-Lynx triangulated 4-bar system. By separating the locating system from the spring, it's possible to drastically improve geometry, traction, and handling while using a lighter spring and shock to provide excellent ride quality and wheel control. No cutting to weld in a single crossbar between the factory frame rails. Coil-overs mounted ahead of the axle eliminate wheel hop normally associated with 4-bar systems, yet allow stock gas tanks to fit. Lower links bolt into stock leaf spring location with the included adjustable front mounts, or links can be used in conjunction with standard inboard relocation kits and mounted under the frame rails for increased tire clearance. Includes Viking Double Adjustable shocks, standard.

Axle housing not included. Choose rear axle type you'll be using - 8.75/Ford 9 allows TTI tailpipes, Dana 60 will not allow tailpipes. Shipped with RMS' recommended spring rates and free shock adjusting wrench.





### SL6-PISTON KIT Add serious stopping power

to your system with a 6-piston big brake kit.

Requires 17° or larger wheels. Choose from slotted GT rotors, or drilled/slotted SRP rotors. Braided stainless steel brake hose included.

REILLY MOTORSPORTS, INC. CALL 570-443-7440 WHITE HAVEN, PA.18661



### HYDRAULIC POWER BRAKE PACKAGE

Hydraulic power brake assist works by plumbing into power steering lines. No need for engine vacuum. Complete with Hydraulic Unit, Wilwood tandem master cylinder, and all hoses/hardware. Compatible with any brake kit, stock or otherwise.

WWW.REILLYMOTORSPORTS.COM LIKE US ON FACEBOOK -FACEBOOK.COM/REILLYMOTORSPORTS

### THE REST OF THE BEST

### MORE KILLER MOPARS FROM THE 2014 SEMA TRADE SHOW IN LAS VEGAS!

BY JOHNNY HUNKINS OPHOTOGRAPHY BY THE AUTHOR & JOHN MACHAQUEIRO

ou would think with nearly a week to check out everything at the SEMA Show (November 4-7, 2014) that it would be a slam dunk to see every single Mopar in the joint-and that's what we made our mission to accomplish. But it wasn't that easy. The Las Vegas Convention Center encompasses over 3 million square feet of interior exhibition space in three different exhibit halls—some of the largest in the world. Then, there's all the outdoor space to cover too. It's enough to wear out a pair of shoes in no time. In the end though, we had a lot of fun spotting and shooting Mopars. We would love to have done stories on all of them, but we have space limitations to work with. That said, we didn't want guys questioning why we missed their favorite car of the show, so we figured we did have enough room to show at least one pic of every Mope we spotted, and here they are.

This two-page gallery should give you a really good flavor as to the current trends in the styling and build-out of SEMA-level Chrysler power. It runs the gamut from letter-perfect restorations (check out the Hemi sunroof '71 Charger!) to the Mercury Marine-powered '70 Dodge Charger. And, of course, latemodel Hemi machinery was all the rage, with the very first 392 Dodge Charger Scat Pack for 2015 making its appearance in Chrysler's booth. Bottom line, Mopars both old and new serve as deep inspiration for many manufacturers and builders who could easily have chosen other makes, and that means a greater selection of aftermarket parts for all Chrysler faithful! MM





# FINDING H.

### BY JOHNNY HUNKINS

### PHOTOGRAPHY BY JOHN MACHAOUEIRO

or every car guy, there is a magic moment that locks in the passion for life. In the case of Paul Lee, that defining day came in the summer of 1971.

Curiosity aroused, Paul begged his father to drop him off at the front gate of Atco Dragway—the legendary South Jersey quarter-mile that to this day has the reputation as one of the fastest, besthooking tracks anywhere on the planet.

The 13-year-old pressed his face against the chain-link fence. The explosive crackle of a nitro-burning Funny Car instantly changed to a wail, and rattled the bones of his inner ear to the point of physical pain. Paul seemed unfazed as his steely eyes locked onto the blue Chevy of "Jungle Jim" Liberman. A thousand feet down the track, Liberman finally lifted, and the packed crowd roared to its feet. The reverberation of the nitro-injected Hemi died away, its pungent energy gradually swallowed by the pine barrens.

In the other lane, Leroy Goldstein did the same in the Ramchargers Challenger; the white and red Mopar incinerated its swollen rear slicks, in the process creating long hot trails that would propel the missile down track. He backed the flopper into the staging area where Liberman waited. The two Hemis beat the air with a barrage of cannon fire, like two juggernaut ironclads locked in battle. The announcer's tinny voice on the PA somehow cut through the thunder, his unbridled excitement bouncing off the grandstands. Lights flashed and the two sleek machines bolted down track in lockstep,



stiletto-thin yellow flames erupting from zoomie headers and stabbing the blue sky. Paul took in the sights, sounds, and smells of that scene, and in that moment found harmony in the universe.

In the coming months, years, and decades, this singular boyhood experience in the pine barrens of South Jersey would give shape and purpose to Paul's life, informing his actions through both conscious decision and by an unconscious and relentless gravitational pull. And as you'll see, it's also what shaped his decision to build the '70 'Cuda you see here.

At the age of 17, Paul began surreptitiously drag racing his mother's six-cylinder Duster. Then he got his own '73 Camaro, coincidentally the same kind driven by his hero, "Jungle Jim" Liberman. A full-chassis Super Probracket car came in 1983, which ran a steady string of 9.30s and 9.20s. Then in 1988, Paul made the life-altering move into an Alcohol Funny Car, which he owned and drove until 1993.

# ARMONY

A BOYHOOD DREAM PUSHED PAUL LEE TO DO MORE THAN HE EVER IMAGINED, AND IT'S ALL MANIFESTED IN THIS AMAZING '70 'CUDA.



Here is where the story might end, except for two things: Paul has the rare capability of seeing the world with a much bigger picture, and he's one tenacious pit bull. Life as the owner of a struggling Alcohol Funny Car team means everything else is sacrificed for those precious five seconds of nirvana. It means giving up control of a huge chunk of your existence for a really small slice of exquisite bliss. As Paul put it, "I wanted to be more in control of my destiny, and to do that you have to be successful in business."

When that lightbulb blinked on, Paul wasted no time. He sold the Funny Car and went to work driving for other teams, gaining more experience, making more connections, and forging friendships that would stand the test of time. Meanwhile,

Paul was quietly amassing an arsenal of degrees that would give him the skills to succeed in business, from an undergraduate degree in finance from the esteemed Wharton Business School, to a master's in finance and a law degree, both from Rutgers University. Did we mention Paul was tenacious?

Armed with the right education, Paul began his economic emancipation, working at various financial securities firms, then at the Philadelphia Stock Exchange. His driving career likewise took a fortuitous turn, culminating in a Top 10 points total in NHRA's Alcohol Funny Car category in 2004 after winning events in Englishtown, Topeka, and Atlanta. In 2005, Paul moved from the Alcohol Funny Car ranks to nitro Funny Car where he became

'cuda!

the shoe for J&B Motorsports. The change was exhilarating for Paul, where he quickly became the student once again. Paul told us, "An alcohol Funny Car is very hard to drive. You've got to rev it up, you've got to dump the clutch, you have to hit the shift points, and you've got to steer it. The nitro Funny Car is like a bucking bronco—it's all manhandling. You don't have to shift it, you just have to steer it. It's so much quicker. The nitro Funny Car moves faster that you can think, you just drive it by feel. The alcohol Funny Car is a pretty forgiving car, but the nitro isn't. You can have a bad day real fast in a nitro Funny Car."

"Lee took in the sights, sounds, and smells of that scene, and in that moment found harmony in the universe."

### FINDING HARMONY

Around that time, Paul left the Philadelphia Stock Exchange to take a job as CFO of Boninfante Friction, who are among other things the manufacturers of clutches for nitro funny cars. See how things have started to come full circle? First a spectator, then a driver, and now on the product side making commitments and contributions where it really counts. The experience at Boninfante provided Paul with a learning-rich environment for the performance aftermarket, and when the opportunity came to purchase McLeod Racing from B&M in 2008, Paul jumped on it. Says Paul, "McLeod was a brand name I grew up with. It was a dream job to actually own McLeod. I loved the clutch business working with Boninfante and driving Funny Cars, and I was a clutch guy as a driver-I've always been interested in the clutch business. They had already been building high-quality clutches for 40 years before I bought it, so it's a dream come true."

The perfect storm had started; the new CEO of a legacy performance driveline aftermarket manufacturer was not only a financial guru with connections to Wall Street, he had serious cred as a driver and a product guy. (His best 1,000-foot e.t. of 4.03/310 behind the wheel of Gary Densham's Dodge Charger certifies him as one of the fastest land-bound pilots on the planet.) And while most bean counters at big companies spend their days trying to arbitrarily squeeze ever lower costs and higher margins out of a product line, Paul knows as a racer that people bet their lives on McLeod components. He also knows that quality and excellence can make the difference between having a crappy weekend at the track, and having a memorable one.

At the end of the day, however, all Paul really wanted was to drive a fast hot rod. ("I'm still 13 in my head," Paul joked.) His life has been dedicated to putting himself in the position where he could build (without financial remorse!) the ultimate street machine. Beyond that, he's also been able to do it in such a way that enhances and validates the product he sells while at the same time projects McLeod Racing's visibility in new, exciting ways. Such was the motivation behind the McLeod-red '70 'Cuda.

Its conception was simple: When you drive a 4-second nitro Funny Car on the weekend, the long stints behind the wheel in daily traffic can be mind-numbing to the point of torture. The choice of cars was a no-brainer for Paul: "A 70 'Cuda has always been my idea of an ultimate street car. This is my 20-year dream. I just love the look of that car. And, of course, it has



The race-inspired interior of the 'Cuda is dominated by red accents—a color Paul calls "McLeod Red." Spartan though it may look, it is comfortable, thanks to Corbeau Pro Series seats and Vintage Air. A Racepak dash ties all the engine info together in one convenient readout.



The Art Morrison Max-G chassis can be specced in the rear with either a triangulated four-link, or a three-link with a Watt's linkage as you see here. The coolest thing is that it's possible to swap them back and forth to optimize the car for drag racing or road racing.



The F2-boosted 528ci Gen II Hemi under the hood of Paul Lee's '70 'Cuda peaked the dyno strain gauge at 1,129 hp and 1,077 lb-ft—both occurring at 5,500 rpm. That fact alone means this engine was nowhere close to making max power when the throttle was chopped.

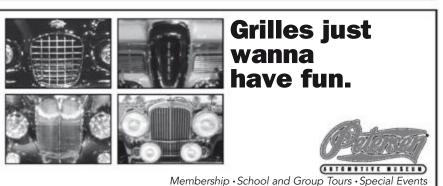






# FINDING HARMONY





6060 Wilshire Boulevard at Fairfax in Los Angeles

Open Tuesday-Sunday & Holiday Mondays 10am-6pm • (323) 930-CARS • www.petersen.org
The Petersen Automotive Museum Foundation is a 501(c)(3) nonprofit charitable organization.

to have a Hemi." And not just any Hemi. Being an industry insider, all the arrows pointed to Arrington Performance, one of the best in the business at building powerful Mopars. Pete Basica and the Arrington team got to work speccing out a 528ci Gen II Hemi that cranks out an easy 1,129 hp on 93 octane at a loafing 5,500 rpm. That all-aluminum mill is hung with the best stuff out there, including an F2 ProCharger, Holley Dominator EFI, and Edelbrock's new aluminum Hemi heads (just the second set in existence).

The car itself—a 318 automatic car originally built in California—was sourced from Paul's brother, Barry, who is a respected Mopar restoration expert in Middleburg, Florida. Once back in its home state of California. Bones Fabrication of Camarillo. California, was tasked with the 'Cuda's transformation. The metamorphosis wasn't easy, as most of the original body panels were damaged and had to be sacrificed for new ones. Moreover, the plan was to put all that Hemi power to the ground with a modern performance chassis, a process that involved cutting out the entire OE suspension and subframe, and replacing it with an Art Morrison Max-G chassis. The car's body was skillfully channeled over the Morrison chassis. which features a C6-derived IFS with Ride-Tech coilovers in front, and a three-link with Watt's linkage and RideTech coilovers in the rear. As a result, the McLeod Racing 'Cuda is as capable as its silhouette is stunning.

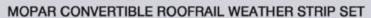
Maintaining the same mechanical excellence in other areas, Paul called upon brake components from Wilwood, RT-S forged wheels from Weld, Sportsman S/R tires from Mickey Thompson, a rearend from Strange, a shifter from Hurst, ignition components from MSD and Crane, and a fuel system from Aeromotive. We noticed something about this list immediately: At some point in his racing career, Paul owed part of his success and/or survival to all these manufacturers' parts. Now he's putting that out there for all to see.

Naturally, McLeod Racing components are a big part of the mix, such as McLeod's renowned RXT dual-disc clutch, which is rated at 1,000 hp, but as this example suggests is clearly capable of much more. Likewise, McLeod's revolutionary new Muscle Car 5 manual overdrive transmission is a featured product in the '70 'Cuda. With a modest torque rating of 600 lb-ft, it too is clearly capable of handling quite a bit more with deft use. And finally, the McLeod 'Cuda makes use of the company's popular hydraulic throw-out bearing assembly.

Typically when you read about guys who build trend-setting g-Machines, there's plenty of chest beating about hitting the pro autocross, car show, or open road race circuits and setting the world on fire. When you're Paul Lee, you've already done so much more

### CONVERTIBLE HEADQUARTER

POWER TOP AND WINDOW PARTS FOR 1946 & NEWER US CARS TOP CYLINDER \$139 EACH TOP LATCH \$149 EACH MOTOR PUMP \$229 HOSE SET \$100





1962-65 B BODY.....\$179 1963-66 A BODY ..... \$159 1967-69 A BODY ..... \$159 1969-70 C BODY ......\$179 1970-71 E BODY......\$179



5530 INDEPENDENCE COURT PUNTA GORDA, FL 33982

800-343-4261

941-639-0437

www.hydroe.com

EXTENSIVE INVENTORY

KNOWLEDGEABLE STAFF AND FRIENDLY SERVICE

SAME DAY SHIPPING ON MOST ORDERS

FROM THE SMALLEST PART TO COMPLETE CONVERSION PACKAGES BREWER'S PERFORMANCE HAS IT ALL !!!



Tormance Inc.

BREWER'S PERFORMANCE 10510 W. STATE ROUTE 571 **LAURA, OH 45337** PH: 937-947-4416 937-698-4259 9AM-5PM Mon-Fri FAX: 937-947-4419 (24 HRS)

### 4-SPEED TRANSMISSION & COMPONENT SPECIALISTS



Rebuilt 4-Speeds, Outright 23 Spline 18 Spline \$999.95 - 1,399.95 from \$2,095.00

Rebuild Service on Your Transmission, \$395 (plus parts)



1970 B-Body Console Pistol Grip Boot \$89.95



A, B, and E-BODY COMPLETE 4-SPEED CONVERSION PACKAGES FROM \$3,995.00

from \$249.95 \$19.95 \$19.95 pr \$59.95 \$6.95

\$19.95



Big Block Bellhousings Only \$299.95!



1962-5 B-Body 1966-70 B-Body 1967-76 A-Body \$159.95 1970-4 E, 71-4 B-Body 1971-4 B-Body (Bench) \$159.95 \$159.95



Steel Bellhousing Lower Covers from \$79.95 Small Block Starter Seal \$39.95 \$39.95 from \$79.95 from \$19.95 \$22.95 Clutch Forks Clutch Fork Pivot Brackets Clutch Fork Boots, All Models

Reproduction Hurst Pistol Grip Levers

1970-4 E, 71-4 B-Body 1971-4 B-Body (Bench) 1970 B-Body (Non-Console) Replacement Grips \$179.95 \$189.95 \$199.95 \$31.95 \$29.95 \$16.95 Shift Pattern Lens





Centerforce & McLeod Clutch Packages from \$319.95

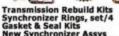
Pedal Kits Pedal Kits
Clutch Pedal Stud Brackets
Clutch/Brake Pedal Pads
Clutch Rod Pedal to Z-Bar
Clutch Rod Boot, Most Models
Clutch Rod Boot 62-5 B-Body

Shifter Boots from \$49.95 Shifter Boot Bezels from \$29.95



Linkage Rod Sets
Operating Lever Sets
Rebuilt Shifter Mechanisms, exchange
1970 B / 1970-4 E NEW Shifter Mechanisms
Hurst/Inland Conversion Shifter
Billet Shifter Mounting Plates / Hardware from \$124.95 from \$49.95 from \$199.95







ိုဝ

Torque Shafts (Z-Bars), all models Torque Shaft Service Kits Frame Ballstud Brackets Clutch Adjusting Rod Kits



A-Body Big Bolt Alloy Axles \$369.95 Non-Adjustable "Green" Axle Bearings \$79.95 pr



\$89.95 from \$36.95 \$39.95 \$46.95







Getting the stance just perfect was left to Bones Fabrication in Camarillo, California. They were responsible for mating the Morrison Max-G chassis to the 'Cuda body and teaming it to the powerful Arrington-built Hemi.

As you can imagine, McLeod driveline components are integrated throughout.

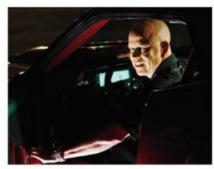






than that. I mean, what else is there to do in life once you've stuffed your right foot into Gary Densham's 10,000hp nitro-burning Hemi and kept it there for over four seconds? Paul running his 'Cuda at a local autocross would kind of be like George W. Bush running for mayor of Crawford, Texas. Nevertheless, Paul intends to let his customers see what the car is capable of, and that includes racing. "We're going to use it and take it to lots of different shows." Paul says. "It's got so much power and is so much fun; we'll try it out on the autocross and the dragstrip to see what it will do. It just blows the tires off right now, but it's designed to go low 9s or high 8s. I don't know—the car's fast." The next time you'll see it is at Moparty At The Strip, scheduled for March 27-29, 2015.

Forty-three years later, Paul sits behind the wheel of his '70 'Cuda, and pauses momentarily before stabbing the start button. The last glimmer of the sun slips below the Spring Mountains, and he contemplates the twinkling Las Vegas skyline in the distance. It is, however, the faint tincture of nitromethane in the air that freezes him in place. As we wrap up our photo shoot the Saturday after the SEMA show, nitro Funny Cars are making



qualifying passes at the strip across the road. An almost inaudible rumble turns to a muted whine, then stops. The decaying moan chases playfully across the surrounding hillsides. "Sounds like a good run. Maybe a 4.18," Paul stated matterof-factly. I shoot a questioning glance at photog Machagueiro and both of us squint through rolling waves of heat at the distant scoreboard. Dumbfounded, we make out a 4.18. In that moment, I can't help but imagine a 13-year-old boy pressing his face into a chain-link fence, wanting more than anything to drive a badass hot rod—to find harmony in the universe. My reverie ends suddenly as Paul's Hemi shatters the night air. That's right, he already has. MM



Here you can see hints of the additional effort Bones Fab went through to arrive at the final silhouette; note how the back of the hood at the twin scoops has been raised to accommodate the big Hemi, which sits higher due to the body being channeled over the frame.

FAST FACTS

1970 PLYMOUTH BARRACUDA CAR OWNER: Paul Lee • Orange, CA

### **ENGINE**

TYPE: 528ci Gen II Hemi

**BORE & STROKE:** 4.500 x 4.150 inches

COMPRESSION RATIO: 10.0:1

**BLOCK:** Mopar Performance aluminum

ROTATING ASSEMBLY: Molnar forged crank and rods, custom Diamond forged pistons

CYLINDER HEADS: box-stock Edelbrock Hemi, 2.32-/1.94-inch valves, CNC-contoured combustion chambers and CNC-blended seats

CAMSHAFT: Arrington-spec solid roller, 252/260 degrees at .050-inch lift, .684-/.674-inch lift, 114 LSA

**VALVETRAIN:** COMP Cams 829-16 solid roller lifters, Indy/T&D shaft rocker system

INDUCTION: ProCharger F2 supercharger, custom Arrington intake manifold with integrated ProCharger carb bonnet, Arrington 88mm billet throttle body (drive-by-wire control), Holley Dominator ECU with universal MPFI harness, Holley 83-lb/hr injectors and Holley rails

**INTAKE MANIFOLD:** Arrington-modified Mopar single-plane

**FUEL SYSTEM:** Aeromotive pump and regulator

**OILING:** wet sump lube circuit, Milodon pan, Indy oil pump and pick-up

**EXHAUST:** custom 2.125-inch primary long-tube headers into custom 3.5-inch dual exhaust with oval 3.5-inch side-exits, custom Flow-master mufflers

**IGNITION:** Crane Hi-6 box and coil, MSD Super Conductor ignition wires, MSD flying trigger

**COOLING:** Griffin radiator, SPAL electric fans, Mopar water pump

**OUTPUT:** 1,129 hp at 5,500 rpm, 1,077 lb-ft at 5,500 rpm (93-octane fuel)

**BUILT BY:** Arrington Performance, Martinsville, VA

### DRIVETRAIN

**TRANSMISSION:** McLeod Muscle Car 5 manual overdrive (2.95, 1.99, 1.34, 1.00, and .63 ratio)

**CLUTCH:** McLeod RXT Twin-Disc, McLeod flywheel and hydraulic throw-out bearing

SHIFTER: Hurst

**REAREND:** Strange S60, 3.73 gears

### **CHASSIS**

CHASSIS: Art Morrison Max-G chassis

FRONT SUSPENSION: C6 type IFS by Art Morrison, RideTech coilovers

**REAR SUSPENSION:** Art Morrison three-link with RideTech coilovers and Watt's linkage

STEERING: Art Morrison power rack & pinion

**BRAKES:** Wilwood 14-inch discs with six-piston calipers up front, 14-inch discs with four-piston calipers in the rear, Wilwood master cylinder, Hydratech hydraulic brake assist

CAR BUILT BY: Bones Fabrication, Camarillo, CA

### **WHEELS & TIRES**

WHEELS: Weld RT-S SR-71, 18x10 (6.6-inch backspace) and 20x13 (6.4-inch backspace)

TIRES: Mickey Thompson Sportsman S/R, 26x12R18 (front), 29x15R20 (rear)



CITIES ar Shows MILES ROO VEHICLES ENTHUSIASTS

HOTROD.com

DRIVEN BY Ontinental

₹ FACEBOOK.COM/HOTRODMAG TWITTER: @HOTRODMAGAZINE O INSTAGRAM: HOTRODMAGAZINE

Madison, WI Alliant Energy Center

7TH (hampaign, IL Parkland College

Madison, IL (St. Louis) Gateway Motorsports Park

Memphis, TN Memphis International Hoover, AL Hoover Metropolitan **Stadium** 

JUNE Baton Rouge, LA Lamar Dixon Expo Center

OFFICIAL HOT ROD

www.travelplanners.net or 410.349.3000

**VENDOR BOOTH INFO:** 

Contact Martha Carrasco 949.705.3135

**QUESTIONS?** 

Call: 310.363.4231 or email: powertour@hotrod.com

Early registration ends May 23, 2015

CO-SPONSOR Ontinental ்≯



OFFICIAL PRODUCT SPONSOR OFFICIAL WHEELS

PRESENTING SPONSOR

PERFORMANCE



SDFINALE SPONSOR (BATON ROUGE, LA) EVENT LEVEL

CRUISE NIGHT SPONSORS PAINLESS KICK-OFF SPONSOR (MADISON, WI)

WorldMags.net



## 36 NEW MOPAR PRODUCTS

2014 WAS A BANNER YEAR FOR CHRYSLER POWER AT SEMA. HERE'S EVERYTHING PENTASTAR FROM THE JOINT.

### BY JOHNNY HUNKINS PHOTOGRAPHY BY THE AUTHOR & SEMA

YOU NEVER FORGET your first time at the SEMA show. Even the old-timers can't help but get excited about SEMA. You psych yourself up mentally for the sensory onslaught of the Las Vegas Convention Center, but you never really are prepared for the endless isles of gleaming new products, the sleek project vehicles, the roaming celebrities with cameras in tow, and, of course, the main attraction of Mopar Muscle magazine at the Enthusiast Network booth, stationed smack dab in the middle of the Central Hall! If you're not prudent in your time management, it can slip away in a blur-filled week before you know it. It's a fact that SEMA is the undisputed center of the street performance universe, and it's a must-see for anybody in the business.

It might seem unfair that SEMA is limited to just manufacturers, buyers, and the press, but, trust us, when we tell you there's a lot of real estate to cover, and if you don't know where all the good stuff is hiding, you're much more likely to spin your tires fruitlessly. That's where your very own *Mopar Muscle* magazine comes in—we've got your interests in mind when we comb through the aisles and

dig through the SEMA Show website, so you can rest assured that these 36 products are the hottest and newest ones to hit the Mopar world. From Chrysler-specific floor mats on up to a '70 'Cuda body and everything in between, all of your Mopar-specific new products from the 2014 SEMA Show can be found right here, many of which you will see as stories in the coming months.



### B-BODY RALLYE DASH

This bolt-in instrument system is designed to fit directly into the existing, original instrument bezel of any 1968-'70 Dodge Charger/Super Bee, 1969-'70 Coronet, or 1970 Plymouth GTX/Road Runner without modification. (PN VHX-68D-CHG.) These are available with red, blue, or white LED backlighting coupled with silver or black alloy face styling. The system retains the original indicator locations too.

**SOURCE:** DAKOTA DIGITAL

800-593-4160 • www.dakotadigital.com





### HIGH & LOW HORN SET

These new OER reproduction horn assemblies are for use on most Mopar B-Body models from 1966 through 1978 (PN MH108). Each horn assembly is designed and manufactured to correct original specifications, including OEM markings where applicable. And for those with a musical bent, they feature the correct pitched notes as original.

### **SOURCE:** CLASSIC INDUSTRIES/OER

800-854-1280 • www.classicindustries.com

### TWO-PIECE TIMING COVER

Speedmaster's two-piece billet aluminum timing cover is designed for Chrysler 383-440 big-block engines (PN PCE265.1037), and is a great alternative to the stock stamped piece. It's strong and rigid enough to eliminate flexing while holding your cam in place and keeping your timing in control. Most importantly. the two-piece design allows vour camshaft to be replaced or your timing to be adjusted without disturbing the oil pan seal.

### SOURCE: SPEEDMASTER

909-605-1123 • www.speedmaster79.com



### BILLET INTERIOR FOR CHALLENGER

At SEMA, AMI introduced several new items to both its Billet Styling and V-Tech Styling lines for the '08-15 Dodge Challenger. Made in the USA, these items (kit No. 4803K) are easy to install and dramatically change the Challenger inside and out.

SOURCE: ALL SALES MFG. (AMI)

800-891-3592 • www.allsalesmfg.com



Trick Flow gave us a sneak peek of their new PowerPort 240 Big-Block Mopar heads, which look very impressive with 334 cfm of rated flow (.700 inch lift) right out of the box. Also in the plus column are stock-location intake and exhaust ports, lightweight construction (castings are made of A356-T61 aluminum alloy), standard CNC street porting (240cc intake ports, 78cc combustion chambers), compatibility with stock pistons and rocker arm assemblies, revised runners and oiling passage placement, clearance for 3/8-inch pushrods, and beefed-up rocker shaft bosses. The single-plane intake manifold was still in prototype form so details are still sketchy on it, but the idea is to have a complete cam/heads/intake package that will turn any 440 into a 600-plus horsepower street beast. Of course, you can also expect a breakthrough TFS price once it all hits the street.

### **SOURCE:** TRICK FLOW SPECIALTIES

888-841-6556 • www.trickflow.com



### LX SUSPENSION BUSHINGS

Everybody knows that the late-model LX chassis was an evolution of another well-known European luxury car, and as such can be a little too floaty or disconnected for more performance-oriented enthusiasts. That's where Energy Suspension comes into the picture. Their polyurethane components can make a huge difference at a minimal effort and price, and their new system for '05-present LX platform cars (PN 5.3143G) can get the job done right. Each kit includes front and rear sway bar bushings, front and rear control arm bushings, rear differential mounts, and subframe mounts. They're also made to specific durometers for durability and compliance.

### **SOURCE: ENERGY SUSPENSION**

888-292-1250 • www.energysuspension.com



### **392CI FORGED PISTONS**

MAHLE Motorsports now has both low-compression (blown) and high-compression (naturally aspirated) forged Hemi PowerPak piston assemblies for 392ci Apache engines. They include all the typical PowerPak features, like ultra strong, light weight, slipper skirt forged pistons, German steel pins, race-proven round wire locks and the latest 1mm, 1mm, 2mm MAHLE Motorsports ring package. As with all PowerPak pistons, they are coated with a phosphate dry film to protect the pin bores from galling, and have hard anodized top ring grooves for added protection from micro-welding. This is what you'll need to build your own Hemi into a Hellcat killer!

### **SOURCE: MAHLE**

828-650-0813  $\bullet$  www.mahlemotorsports.com

### **B-BODY HOOD HINGES**

These precision CNC-machined billet aluminum hood hinges for '67-70 Mopar B-Bodies (PN MS149-70P) offer increased strength and stability over stock stamped steel hinges, and offer a stunning alterna-



### **SOURCE: EDDIE MOTORSPORTS**

888-813-1293 • www.eddiemotorsports.com



### SHADOW BLACK STREET DEMON

It's no secret that the Street Demon carb is a radically improved version of the much beloved Thermoquad—a mainstay mixer for diehard Mopar lovers. And now Demon's revolutionary Street Demon carburetor is available with Shadow Black ceramic coating to complement its more subdued build style. It's available in 625 cfm, and a larger 750 cfm version—both featuring the aerospace composite fuel bowl which offers significant heat insulating benefits over aluminum fuel bowls.

### SOURCE: HOLLEY PERFORMANCE PRODUCTS

270-782-2900 • www.holley.com

### PHANTOM FLEX STEALTH FUEL SYSTEM

Bestowed with SEMA's prestigious "Best Performance Street Product" at the 2014 show. Aeromotive's Phantom Flex Stealth fuel system was designed for the increased fuel demand of flex fuel engines. It's essentially a complete drop-in fuel system that places a high performance 450lph fuel pump and baffle system into almost any gas tank. Its modular design provides proper fuel slosh control, venting, and performance. It's the perfect solution for high horsepower and flex-fuel applications.

### **SOURCE: AEROMOTIVE INC.**

913-647-7300 • www.aeromotiveinc.com



### 1970 DODGE CHALLENGER R/T MODEL

Celebrating 50 Years of Hemi, this highly detailed 1:24th scale commemorative diecast '70 Dodge Challenger R/T from M2 Machines proudly displays the 50 Years of Hemi logo on its roof and features the "National Hemi Day 4/26" logo on the back windshield. Production is limited to just 5,000 pieces, so get yours today!

### **SOURCE:** FUN LINES

800-925-2883 • www.funlines.net

### **36 NEW MOPAR PRODUCTS**



### **ET STREET "R"**

Mopar street machines are capable of putting out huge amounts of power, and that often finds itself at odds with the current street tire technology. With Mickey Thompson's new ET Street "R" DOT tire, however, you just may have a fighting chance. The ET Street "R" is essentially a tubeless drag tire that can be driven on the street; its proven R2 compound is already used on the quickest drag radial cars around, and it can provide superior traction at the strip with little or no burnout. Of course, it goes without saying that high level of traction is also available on the street as well. See if one of the ET Street R sizes below fits your Mopar.

AVAILABLE SIZES	31x16.5-15 (bias)
225/50R15	32x17.5-15 (bias)
26x10.5-15 (bias)	34x18.5-16 (bias)
275/50R15	245/45R17
255/60R15	315/35R17
28x11.5-15 (bias)	305/45R17
325/50R15	305/45R18

### **SOURCE: MICKEY THOMPSON**

 $330\mbox{-}928$  - 9092  $\bullet$  www.mickeythompsontires.com



### A-BODY REAR SUSPENSION

QA1 has been on fire with its recent torrent of Mopar product releases, and this latest one has us blown over. QA1 has really outdone themselves with this new bolt-in rear suspension conversion system for '67-79 A-Bodies, which replaces your leaf springs with a revolutionary six-link suspension. (It was also a show favorite and captured SEMA's coveted Global Media Award.) The six links improve handling, ride quality, and performance, plus it all mounts into existing locations on the chassis. QA1 says they will be offering B-Body and E-Body versions in the near future, so stay tuned!

**SOURCE: QA1** 952-985-5675 • www.qa1.net



### MILLERMATIC 190 MIG WELDER

At just 35 pounds, the Millermatic 190 all-in-one MIG welder delivers the best arc characteristics in its class, and welds 24 gauge to 5/16-inch mild steel. Auto-Set makes setup quick and easy. New transformerless inverter technology means it's not only lightweight, but more rugged too!

### **SOURCE:** MILLER ELECTRIC MANUFACTURING CO.

800-426-4553 • www.millerwelds.com



### BIG-BLOCK SERPENTINE SYSTEM

One part number in the Eddie Motor-sports catalog gives you a complete kit with everything you need to accessorize your 383/400/440 B/RB big-block with a top-shelf American-made billet aluminum serpentine accessory drive system. The kit offers a simple, hassle-free installation and a sleek, compact profile with a brilliant show-quality appearance. Offered in a bright polished finish or in a variety of custom colors.

### **SOURCE:** EDDIE MOTORSPORTS

888-813-1293 • www.eddiemotorsports.com



### STREET LCD DASH

Get Auto Meter's leading edge LCD display technology in an affordable package designed for both the sportsman racer and high-tech Pro Touring street machine. Using Bluetooth technology to communicate directly off your vehicle's CAN bus, the LCD dash may also be used in non-computer cars with a wireless sensor module with discrete sensor inputs for stuff like oil pressure, water temp, tach signal, and voltage. It's got built-in data logging and an optional LED shift light too.

### **SOURCE: AUTO METER**

866-248-6356 • www.autometer.com

### **PRO SERIES SEATS**

When it comes to seating, the performance industry just assumes Mopar guys want the same old factory recovering job, but it just isn't true. Some want comfortable, grippy seating for spirited driving, and now the seating experts at TMI offer their Pro Series seats in a universal style for all muscle cars, including Mopars. These lowback versions are surprisingly affordable too, beginning at just \$469.95 each (or 939.95 a pair). Highbacks like you see here are just another \$30

### **SOURCE: TMI PRODUCTS**

951-272-1996 • www.tmiproducts.com



### DUAL CONICAL VALVESPRINGS

COMP Cams' takes the concept of its "beehive" further with its new Dual Conical Valvespring. The technology reduces the needed spring load by lowering or eliminating harmonic resonance that results from spring coils of equal radius. Such a low active mass conical spring design combined with dual springs with separate inner and outer coils provides outstanding damping without friction, heat, and surface damage. That all translates into more rpm, better stability, greater durability, and lower spring loads for any given valvetrain. With retainer clearance being such an issue with Mopar engines which largely run shaft-style rockers, we see this as a big plus for Mopar guys!

### SOURCE: COMP PERFORMANCE GROUP

800-999-0853 • www.compcams.com



### DOOR HANDLE SET

Mopar B-Bodies don't get much aftermarket support after 1970, so it's a welcome addition to see the folks at TrimParts add both '71-72 (shown) and '73-74 door handle sets to their extensive catalog of resto Mopar hardware. Each handle is manufactured to original specifications for a perfect fit, look, and feel. Also, all Trim Parts' Mopar products are licensed by the Mopar Authentic Restoration program.

### SOURCE: TRIMPARTS INC.

513-934-0815 • www.trimparts.com

### OFFSET .904 ROLLER LIFTERS

The racing world has caught on to the Mopar lifter secret: its larger .904-inch lifter diameter translates into higher lift numbers, more aggressive lobe profiles, better flow, greater valvetrain stability, and more power. That's why boring, sleev-

ing, and honing brand "X" blocks to Mopar size and using Mopar lifters is one of the most popular tricks for engine builders of all stripes. Nevertheless, the situation could be better for Mopar guys. With the cam so high in the block relative to brand X blocks, it means pushrod angularity can be an issue when offset rockers are used in higher-powered motors. Enter COMP Cams, and their offset Sportsman solid roller lifter. These premiumquality, high-value offset versions of their existing Sportsman roller lifters are designed specifically for Mopars to provide extra clearance for those large intake runners and 3/8-inch pushrods.

### SOURCE: COMP PERFORMANCE GROUP

800-999-0853 • www.compcams.com



### FIVE-SPEED OVERDRIVE

In theory at least, doing a modern five-speed overdrive manual transmission in a muscle car should be as simple as designing an appropriate bellhousing, selecting the right clutch assembly, making the right length driveshaft, and producing the attendant shifter and linkage. A hefty task for sure, but it doesn't address two primary concerns for many Mopar owners: how do I avoid cutting out the OEM trans tunnel or torsion bar crossmember? Most modern aftermarket transmissions have physically large cases which may do well in other makes, but hit a brick wall in Chryslers. The Mopar fans at McLeod Racing have come to the rescue with their Muscle Car 5 Overdrive, which has a case designed specifically for tight tunnels. The internal-rail shifter and synchronized gearset means quiet, smooth shifting, and you know it's strong because McLeod tests everything in the crucible of racing.

### **SOURCE: MCLEOD RACING**

714-630-2764 • www.mcleodracing.com



### **GEN III HEMI EFI**

Anybody who has tried to break Chrysler's engine code while swapping in a Gen III Hemi knows how hard it is, mostly because they fail 999 times out of 1,000. Holley's new Gen III Hemi-specific harness in combination with Holley's Terminator EFI system has cracked the code and them some, giving the stock computer the heave-ho in favor of a plug-and-play harness that simply snaps onto all the Hemi's sensors and actuators. Teamed to the Terminator, the Hemi-specific harness gives it super powers like self-tuning, throttle-by-wire control, fuel system control, and ignition tuning.

### SOURCE: HOLLEY PERFORMANCE PRODUCTS

270-782-2900 • www.holley.com

### **ET STREET S/S**

If your Mopar is a serious street machine, chances are it will either suffer from not enough grip, or in the case of a DOT race tire, it may suffer from not having enough void space for the evacuation of water. The great thing



about Mickey Thompson's new ET Street S/S is that is has their race-proven R2 compound for wicked grip, yet it also has a tread-to-void ratio for improved hydroplane resistance. The ET Street S/S has an attractive street radial tread design and comes in an assortment of 18 sizes ranging from 15-inch diameter on up to 20 inches, so everybody's covered from street/strip machines to pro touring rides!

### **AVAILABLE SIZES**

235/60R15	305/35R18
275/50R15	285/40R18
255/60R15	305/40R18
275/60R15	345/35R18
295/55R15	325/30R19
295/65R15	305/35R19
255/50R16	335/25R20
275/40R17	275/40R20
315/35R17	305/45R20

### **SOURCE: MICKEY THOMPSON**

330-928 - 9092 • www.mickeythompsontires.com

### DUAL PHANTOM STEALTH FUEL SYSTEM

Like the original ground-breaking Phantom Stealth, the Dual Phantom Stealth is a dropin fuel system that turns any tank into a serious sumped fuel cell, but with a twist—the dual version features two 340-lph performance fuel pumps for even more horsepower! (A minimum of 1,400hp EFI forced induction on up to 2,000 hp carbureted naturally aspirated.) It baffles into almost any fuel tank, including cells with bladders and the modular design is cut-to-height for any sized tank, and it provides fuel slosh control and venting. Moreover, the innovative design allows the twin pumps to be run independently or in parallel to fuel high-horsepower applications.

### **SOURCE: AEROMOTIVE INC.**

913-647-7300 • www.aeromotiveInc.com



### **MOPAR RADIO**

According to RetroSound, the Redondo is the first modern radio for classic Mopar vehicles. It looks like the original factory radio, but boasts modern features such as being made for iPods and smartphones. It's also got built-in Bluetooth, it's Sirius-ready, and has a color gamut of over 32,000 colors in its display. The Redondo also comes with distinctive Mopar "thumb roller" controls or standard radio knobs.

### **SOURCE:** RETRO MANUFACTURING

702-483-2222 • www.retrosound.com



### B-BODY PILLAR POST END SEALS

These new quarter pillar post end seals for '66-67 Dodge and Plymouth B-Body two-door hardtops and convertibles is now available from Metro Moulded Parts. They're USA-made with 15-year warranty too! Just ask for PN ALP 7007.

### **SOURCE: METRO MOULDED PARTS**

800-878-2237 • metrommp.com



### **1970 CUDA BODY**

Downs Custom Performance Automotive had their all new reproduction '70 'Cuda body looking good in the South Hall of the SEMA Show. It's made of 100 percent hand-laid composite with steel reinforcement, but it can be built in carbon fiber, or with a special race-weight lay-up. Downs builds each body to accept OEM glass, and their body packages on the '70 'Cuda include an original or custom-style hood, dash, custom rear interior panels, and a full OEM glass package.

**SOURCE:** DOWNS CUSTOM

616-259-9395 • www.downscars.com

REPRODUCTION HOODPINS

TrimParts was on the move once again in the Mopar camp with their '69-74 steel hood pin kit with 18-inch lanyards. It's a beautiful reproduction of the original hoodpins used on a number of high-performance Mopar, and includes the chrome

hood bezel with all necessary hardware and gaskets to mount as original.

**SOURCE: TRIMPARTS INC.** 513-934-0815 • www.trimparts.com

### **SUPER BEE FLOOR MATS**

Sometimes the only thing left for your Mopar

to be perfect is the right finishing touch, and Legendary Auto Interiors has '68-70 model Dodge Super Bees covered. These custom floor-



mats have the old-school look, and feature rugged construction and the classic Super Bee logo front and center.

### SOURCE: LEGENDARY AUTO INTERIORS

800-363-8804 • www.legendaryautointeriors.com



### HANDHELD TUBING STRAIGHTENER

Whenever a classic Mopar is restored, it always seems like the brake line and fuel line tubing takes the brunt of the "rehabilitation" process. Lines are the last thing to get done, and they often get re-worked, re-bent, and temporarily re-routed time and again. Often the result is a line that looks more at home in a junkyard than a restoration, and worse yet, has hidden fatigue from all that reworking. What you need is one of Eastwood's handheld tubing straighteners for 3/16-, 1/4-, and 3/8-inch tubing. (Eastwood says more sizes are coming soon.) This time-saving tool allows you to quickly straighten tubing for brake systems, fuel systems, and a lot more.

**SOURCE: EASTWOOD CO.** 610-705-5402 • www.eastwood.com



### **E-BODY DOOR PANELS**

Try as you might to scrub, clean, fill, and dye the surface of your E-Body's door panels, sometimes there's no coming back from the damage done by the sun's harsh rays. What's worse, the careful restoration you just finished makes those old door panels even more hideous looking. What you need are a new set of '70-74 E-Body door panels from Trim-Parts. These panels are injection molded just like the originals! In fact, the fronts and rears both come with window felts already attached as a pre-assembled door and they are ready to hang on the door shell. Available in black, white, red, and blue.

### **SOURCE:** TRIMPARTS INC.

513-934-0815 • www.trimparts.com

ENGINE MANAGEMENT SYSTEM

FAST's new improved XFI 2.050 now includes individual AFR cylinder tuning, dynamic fuel pressure sensing, advanced timing and ramp retard control for power adder



engines, advanced boost control for racing, remote baro measurement, and compatibility with EZ LS and eDash. Plan to make some big power with your next Mopar? The XFI 2.050 has you covered.

### SOURCE: COMP PERFORMANCE GROUP 877-334-8355 • fuelairspark.com



### GILMER DRIVE KIT

When it comes to building traditional street machines with big, honkin' 6-71 blowers, nobody rolls old school like the Aussies. Problem is, Chevys and Fords get most of the support. Now Speedmaster, a company best known in Australia for doing 6-71s right, has come to the rescue of small-block Mopar guys needing a sweet Gilmer beltdrive for their GMC-style huffer. They've even got a store right here in Cali you can call!

### **SOURCE:** SPEEDMASTER

909-605-1123 • www.speedmaster79.com



No word on what the exact horsepower benefit is with Airaid's new MXP Cold Air Intake system, however we typically see gains of 2 to 5 percent with well-designed systems like this one. (Like they say, your results may vary.) Airaid's MXP system shown here is designed specifically for '11-14 Dodge Challengers, Chargers, and Chrysler 300s that are equipped with the 3.6L Pentastar V-6, or 5.7L and 6.4L Hemi V-8s. The intake eliminates restrictions in the factory intake and uses an oversize premium filter to improve airflow to the engine.

### SOURCE: AIRAID FILTER CO.

800-498-6951 • www.airaid.com

### **240-AMP ALTERNATOR**

Antique Mopar alternators put out so little amperage, it's not even funny. With today's high-powered infotainment system electronics, not to mention electric fans, high-torque starters, and electric fuel pumps, an old-school 60-amp alternator is going to last you like 30 seconds. Don't get burned up, get powered up a 150- or 240-amp Mopar alternator

Is going to last you like 30 seconds.

Don't get burned up, get powered up with a 150- or 240-amp Mopar alternators from Mechman. These one-wire units are designed specifically for early model '61-79 Chrysler applications. They replace the original "Square Back" or "Round Back" OEM units, and look very similar to the originals.

### **SOURCE:** MECHMAN ALTERNATORS

865-522-6166 • www.mechman.com

### HOLLEY EFI DIGITAL DASH

Voted Best Engineered New Product by SEMA, Holley's EFI Digital Dash represents a growing trend in the mar-



ket for programmable dashboards. This one goes beyond displaying user-defined telemetry from the engine and incorporates data-logging and programming features on a touch-sensitive screen. Its 7.5x4.625-inch screen is customizable and offers a virtual switch panel, user defined alarms, configurable shift lights, and can control on-screen playback of data logs. With the Gen III Hemi market coming on so strong, we see Holley's digital dash as a strong potential player coming along at just the right time.

### SOURCE: HOLLEY PERFORMANCE PRODUCTS

270-782-2900 • www.holley.com



• BIGGER, FASTER, OPEN AUTOCROSS • UNDISCOVERED BUILDERS' INVITATIONAL •

ATURIN

- · MEET FREIBURGER & FINNEGAN FROM ROADKILL!
- CROWD FAVORITE BURNOUT COMPETITION LAP THE MILWAUKEE MILE CAR CRAFT EDITORS' CHOICE AWARDS
- · MISS CAR CRAFT SUMMER NATIONALS COMPETITION

. AND WIICH WORE

### FACEBOOK.COM/CARCRAFTMAG

**▼**TWITTER: @CAR\_CRAFT

PRE-REGISTRATION: \$50 (rate expires 5/23/15) On-Site Registration: \$70

Registration includes vehicle, entry for driver plus copilot, and one goody bag EVENT QUESTIONS? FOR VENDO
Call: 310.363.4231 or
email: 949.705.31
carcraftsummernats@
carcraft.com

FOR VENDOR BOOTH INFO: Contact Martha Carrasco 949.705.3135 OFFICIAL HOTEL
RESERVATION SERVICE:
www.travelplanners.net
or www.carcraft.com
410.349.3000





### COOL HIGH PERFORMAL RADIATORS

RADIATORS THAT
LOOK & FIT
34 RIGHT!

(888) 587-7234 RIGHT!

### **MOPAR RADIATORS**



1962 - 1976 SB & BB Correct Fit Radiators!

22" & 26" available with application specific tanks and brackets, even in aluminum.

Several Core Designs To Cool Any Engine!







www.coolcraft.com sales@coolcraft.com (888) 587-7234

### Quality Exhaust & Headers Specializing in MoPars only





Since 1988

Reproduction Tips

- 63-76 A-body
- 62-74 B-body
- 65-73 C-body
- 70-74 E-body
- 76-80 F-body
- 77-88 M-body
- 62-65 Max Wedge



- 03-07 Ram Truck 5.7 Hemi
- 95-05 Neon

"Dyno proven horsepower & torque

Tube Technologies, Inc. TTi Performance Exhaust and Headers Corona, CA 92880 M-F 8am-4pm PST

951-371-4878

www.TTiExhaust.com

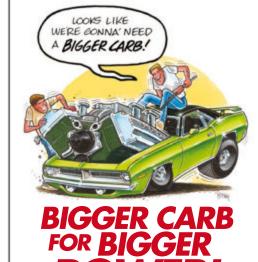


Over a decade ago, MAHLE Motorsports introduced the PowerPak piston assembly, the first shelf stocked assemblies utilizing smaller more conformable metric ring packs that were as much as 24% smaller compared to the metric ring packs that were as much as 24% smaller compared to the competition. Offering increased sealing and oil control with reduced weight and drag, the PowerPak assemblies with their smaller ring packs have powered racers to numerous championships in a wide range of disciplines. Now MAHLE has done it again, upgrading their small block applications to a 1.0mm, 1.0mm, 2.0mm ring pack and the big block applications to a 1.5mm, 1.5mm, 3.0mm. In addition to the benefits the rings offer, are some notable advantages in piston design. Eliminating oil ring support rails on many popular long stroke and rod applications reducing weight, cost and oil control concerns. Another key benefit is the ability to retain more material in critical cross section areas such as between the back wall of the top ring groove and the valve pockets. MAHLE Motorsports is committed to bringing you industry leading innovation and technology for decades to come.

Www.mahlemotosports.com

1-888-255-1942

11 : : : : : :



NOW AVAILABLE IN



STREET

STARTING AT \$312.95

### ► RUN READY™

Modern calibrations in 625 and NOW 750 CFM for mild to wild engine



Integrates Triple-Stack™ boosters with 1-3/8in primary throttle bores that deliver superb throttle response, drivability & fuel economy!



Introduces innovative Introduces innovative 'Goggle Valve' — a secondary throttle plate that delivers over twice the air flow of the primary bores unleashing power you can hear and feel!



Fits most aftermarket spread/sauare bore intake manifolds without adapter!

Available in hand or tumbled polished aluminum, or with an exclusive Aerospace Composite bowl that reduces heater transfer for better performance with today's fuels!

Available TPS kit allows use with 4L60 & 4L80 transmissions

ntegrated 700R4/200R4 transmission kickdown cable mounting location for proper shifts

270-901-3346 | demoncarbs.com









- Accurate cam timing and stability greatly increase the ability of the cam to perform to its maximum potential.
- Stronger than any chain or even belt drive setup!
- Allows precise cam advance / retard using adjustable cam hub pattern.
- The professional style "fixed idler" gear mounts solidly to the main cover which is bolted to the block. No power robbing drag like a floating idler drive.
- No block machining required. Hand tools are used to drill dowel pin holes.
- Available for: 340-360, 354-392, #13600 383-440, and 426 Hemi #13000.



Visit Milodon on the web for additional information:

www.milodon.com Simi Valley, CA • (805) 577-5950 1964 Plymouth Fury, Sport Fury & Belvedere Dash Pads





MADE in the USA by Auto Accessories of America

Only \$595 each



Wholesale Pricing is available for Qualified Dealers. **800-458-3475** 







148 Minnow Creek Lane, Windber, PA 15963



### IF IT ISN'T HERE, IT ISN'T HAPPENING



















MORE THAN

**MORE THAN** 

9,700,000

HOT ROD

RODDER







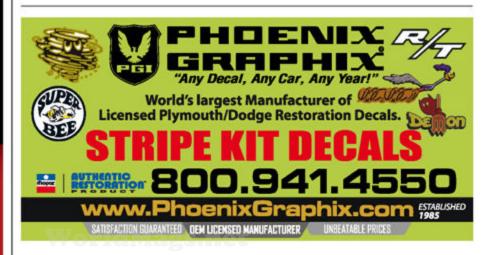
HOTROD.COM

LAUNCH PARTNER









### PERFORMANCE CLINIC

STEVE DULCICH, CONTRIBUTING EDITOR

### **FAT DART**

I have a '75 Dart that I have converted to a 400 big-block engine and a 727 automatic transmission. The engine is completely stock, right down to the valve covers. It came from a late-'70s Dodge pickup, as did the transmission. The only change was adding a full dual exhaust system right out the back bumper, with welded Flowmaster mufflers. I used earlier C-Body exhaust manifolds to clear

the engine compartment. I added a big C-Body radiator and cut the core support open to cool the beast, along with dual electric fans and a big clutch fan. It runs ice cold on the hottest days even with the A/C on. My car was originally a factory air 318, and I retained the air conditioning when going to the big-block.

On the chassis, I put in a Dana 60 with 3.54 gears from a three-quarter ton truck, and narrowed it to fit the back of the car. I

put in the C-Body 11-inch drum brakes, and for even more stopping I swapped the fronts for the factory 12-inch discs. I have steel wheels with dog dish caps, 15x7 in front with 225-60 radials, and 8-inch steel wheels in back with 255s. For handling, I added a big front sway bar and torsion bars, and all poly bushings. In back I have Super Stock leaf springs and CalTracs bars.

I completely redid the interior, keeping the bench seat and factory dash, but I added a modern sound system with 1,000 watts and a pair of 10-inch subs in the back. While the interior was apart, I added the extra insulation/sound deadener kit under the carpet and then used sound mat throughout. It is as quiet as a Cadillac going down the road.

I was expecting the big-block Dart to be a rocket, and don't get me wrong, it moves out pretty good when getting on the gas, but it isn't any threat to a modern muscle car. I had it at the track, and it ran 15.54 at 89.21 mph. I was expecting a 12-second ride after all this work, so I am way off. I think the problem is the 400 is low compression. A guy local to me who has been racing Mopars for years has a set of fully worked 915 closed-chamber heads that are ported and for sale cheap. I know the heads won't be enough to get into the 12s, so what other modifications should I do to the engine?

SCOTT FRENCH

Scott, dragstrip performance is largely dependent on power to weight. Your late-'70s 400 truck motor was factory rated at less than 200 hp, and with the way your Dart is set up, it probably weighs 3,800 pounds. I would look to reducing weight and adding power at the same time with a set of aluminum aftermarket heads instead of those iron 915s. I would also ditch the iron intake, and water pump and pump housing for aluminum versions, and look for other ways to lighten the load. The steel wheels and iron A/C compressor don't help your cause.

On the power end, yes the 400 is low compression, but the only really effective way to fix that is by going with a new set of pistons. At that point you may want to consider a stroker kit, since you are more than halfway there when getting new pistons. The added displacement will help move that extra weight you have added to the Dart. If you are sticking with the





920-324-2481 vansauto.com
The Affordable Restoration Parts Source



1967 GTX Hood Scoops \$395.00 Pair

Visit Our Website To See Our Full Line Of Affordable Restoration Parts

### Side View Mirrors A Body Side View

1962-66 Twin post, chrome	\$125.00	
1967-76 Remote dirver side, chrome	\$175.00	
1967-76 Pass and driver side, chrome	\$125.00	
1967-76 Pass and driver side, manual chrome		
1970-76 Side Sport, chrome driver side	\$175.00	
1970-76 Side Sport, chrome passenger side	\$175.00	
B Body Side View		
1962-66 Twin post, chrome	\$125.00	
1967-70 Driver side remote, chrome	\$175.00	
1967-70 Pass and driver side manual, chrome	\$100.00	
1967-70 Driver side chrome	\$125.00	
1971-72 Driver side chrome		
1971-72 Passenger side chrome		
1973-74 Driver side chrome	\$175.00	
1973-74 Passenger side chrome	\$175.00	
E Body Side View		
1970 Driver side remote, chrome	\$195.00	
1970 Driver side remote, primered	\$195.00	
1970 Driver side manual chrome	\$195.00	
1970 Passenger side manual chrome	\$195.00	
1971-74 Driver side chrome	\$175.00	
1971-74 Passenger side chrome	\$175.00	
C Body / Early Side View		
1962-66 Twin post, chrome	\$125.00	
1965-68 C body, Driver side chrome		
1957-59 All Pass and driver side, chrome		
1958-66 Imperial Pass and driver side, chrome.		
1958-62 Dodge / Plym, Pass and driver side		
1958-64 Chrysler Pass and driver side chrome.		
Violatio At These Chause		

Visit Us At These Shows
Chryslers At Carlisle Monster Mopar
The Monar Nationals Monars In The Par

Fuel Tanks Senders

A body	Available Maria
	nt, Barracuda \$120.00
1967 Dart, Valiar	nt, Barracuda \$120.00
1964-66 Dart, Va	liant, Barracuda \$120.00
1968-69 Dart, Va	diant \$120.00
1968-70 Dart, Va	liant, w/o EEC \$120.00
1970 early 71 Da	art, Valiant, Duster \$120.00
Late 71, 72-76 D	art, Valiant, Duster \$120.00
B body	
1962-65 B body.	\$140.00
1966-67 B body.	\$120.00
	except Charger \$120.00
1968-70 Charger	without EEC \$120.00
1970 Charger wi	th EEC \$120.00
1970 B , except	Charger, w/ EEC \$120.00
1971-72 B body.	\$140.00
Late 72-73 B box	ly \$140.00
F hody	
1970 Cuda	\$120.00
1970 Challenger	\$120.00
1971-early 72 Co	ıda \$120.00
	uda\$120.00
1971, early 72 C	hallenger \$120.00
	hallenger \$120.00

### We carry tanks back to 1957

### Arm Rest Pads

1964-66 A Body front	\$60.00 pr
	\$60.00 pr
1967-72 A body front	\$60.00 pr
1966-70 B body front	
1966-70 Charger	
1971-74 B body front	
1967 A-Body front	\$60.00 pr

920-324-2481 vansauto.com



### <u>Strange</u>

Bolt-in & Custom S60 Rear Ends For Your Mopar



DON'T JUST RACE...

Race Strange

Strangeeng.net • 847-663-1701

400 displacement, the route to increased power is the time-proven combination of cam, compression, headers, intake, and heads. Even with a modest power parts combo you should be able to easily double the factory output of your 400.

### **WIRING WOES**

I bought a '72 Charger SE with a 400 engine and 727 transmission. The car is in very nice condition, and mostly original. It came with the Ralley-style dash,

but instead of a tachometer, it had a large clock. I found the tach aftermarket, and then decided to put it in as a weekend project. When I got up under the dash I was shocked at what I saw. I was expecting to see everything in original condition, because the rest of the car is pretty much unmolested, but the wiring was a mess. The underdash harness was completely unwrapped to the individual wires, and that was the first sign of trouble. I noticed that every wire from the steering column

was cut and re-spiced with a crimped blue butt connector. Next, at the bulkhead connector, every single wire was also cut and spiced the same way. The main battery and alternator 12-gauge wires were bypassed to the ammeter, running through holes drilled below the bulkhead connector in the firewall. Of course, they were connected to the ammeter with a pair of ugly yellow crimped ring terminals.

The strange thing is, even with the butchery, the electrical system on my Charger functions perfectly. The alternator charges just like it should, and the spliced ignition switch and turn signal switch from the column also work flawlessly. The funny thing is, I am a stickler for doing things correctly, even to the point of getting the right gauge and color code wire for the tach circuit I was planning on adding, and the factory Packard 56 terminals to put this wiring through the bulkhead as original. Now it seems silly with the rest of the wiring being a horror show. It would be a big job to replace all that wiring, and will even require tearing down the steering column for new signal and ignition switches. The wiring is all available new, but isn't cheap. Should I bite the bullet and replace it all, or go with it as it is? Even though it works, stuff like this just bothers me.

**BRIAN MORGAN** 

Brian, I think you answered your own question here. You are always going to be thinking about that mess under the dash, and if you are like me, you won't feel right about it until it is sorted out. Those cheap crimped connectors are not known for reliability, especially if the crimps are poor. An eventual failure could leave you stranded, turning into a roadside fix at best, or causing a short leading to fried wiring, or worse. While a new harness isn't cheap, in my opinion, it is worth the peace of mind.

### **SHIFT SOLUTION**

I have a '70 Challenger with a modified 383 putting out about 450 hp, and a 727 automatic transmission. When the engine was built we dyno tested it so I know the horsepower number is real, and it made peak power right at 6,200 rpm. I added a TransGo shift kit to the transmission when I had that rebuilt, which helped quite a bit in making the shifts quicker and more positive. Originally, the transmission would shift at just over 4,500 rpm in drive, and with



### **GET THE ALL-NEW** EDELBROCK HEMI® DUAL-QUAD

• Designed for Gen II (1964-71) 426-572 HEMI engines operating in the 2,500 to 6,500+ RPM range

• Features an single-plane Air-Gap® design with a dual square-bore 4150 style carburetor pad

 Same carburetor spacing and height as the factory, making it a direct bolt-on to all vehicles with a shaker hood

• Retain the same carburetor linkage location from the factory

 Compatible with factory style cylinder heads, but has been optimized for use with Edelbrock Victor Jr. HEMI cylinder heads

• Available for carbureted and EFI applications

In Testing... the new Edelbrock Dual-Quad HEMI out performed the factory intake manifold by over 30 HP!













©2015 EDELBROCK, LLC



FREE CATALOGS: 800-386-8326 • TECH LINE: 800-416-8628, 7am-5pm PST. M-F.

All parts legal for use on Pre-Pollution Controlled Vehicles only. HEMI is a registered trademarks of the Chrysler Group, LLC



PASSION FOR PERFORMANCE





everything back together it now shifts at about 5,000 in drive with the kick-down adjusted for full engagement at wide-open throttle. While this is a lot better than stock, what I want it to do is punch up all the way to 6,300-6,400 rpm when floored in drive.

I know I can manually shift it, but it is an automatic, after all. My '14 Chevy Impala shifts right at 6,500 rpm in drive, using the full power available from the V-6. I think it is ridiculous that the trans in my Challenger shifts 1,200 rpm sooner than the engine makes peak power. As I said earlier, I already maxed out the kickdown lever adjustment, so how do I get this thing to shift at a higher rpm?

**GREG STEELE** 

Greg, I agree that matching the automatic shift points to the powerband of the engine makes the car much more enjoyable to drive. The increase in shift rpm from the shift kit is mostly a function of the increased line pressure. To step things up from there you will need to modify the governor in the trans. Fortunately, the governor is in the tailshaft of the trans, accessible by removing the extension housing from the transmission. You do not have to fully disassemble the trans, and the modification can actually be performed without removing the transmission from the car. A&A transmission can provide a governor kit to get the job done.

### **SLINGIN' MUD**

I have a Plymouth Scamp, which is very similar to a Dodge Dart. I am building a hot rod from this car, but money is pretty tight. I am adding a 360 engine to replace the 318, and right now I am fixing up the body. To save money I am going to go with the flat black primer look, and am using a set of black 15-inch police car wheels. I sanded the car down to spray it, but I found some rust down low when I got down to the metal. The lower part of the quarter-panels behind the rear tires is rotted, and there are a bunch of pinholes around the wheel arches at the back. The rest of the underneath of the car looks pretty good. The rockers and the front fenders are good and solid. Most of the rest of the body is solid too.

My friends say I need to replace the

quarter-panels on both sides, but I don't have a welder and I have never welded before. I am still in high school and I can't afford to have this done at the body shop either. I don't want to delay the project with major surgery to the body that I can't afford, so I was thinking of just hitting the area with some Bondo and spraying it. Will this kind of repair last? How long will it take for the Bondo to blow out? Is there anything I can do to make the repair last longer? Sorry for all the questions, but my friends are telling me I have to replace the quarters.

MIKE CURBY

Mike, the normal magazine guy response here would be to do it right and replace the metal, I hear you here. If you are just going to flat black the thing and bomb around, just mud that Scamp and move on. If you decide to replace the quarters, I'm predicting you are going to get in over your head, and it may never see the road. If you want the repair to last a few years, start by treating the area with a rust converter. Once that sets up, hit the exposed side with a fiber strip wheel to expose as much clean metal as possible. Lightly peen down the pinholes so they will get buried when you mud the panel. Instead of standard filler, skim the area with short strand fiberglass reinforced filler first. If you have to bridge some rusted-out sections, you can do this with drywall mesh tape. Cut this first layer with a Bondo file, and then skim with regular filler to finish it. Blow the whole thing over with your flat black primer and you are done.

### MAGNUM MAKEOVER

I have a complete 5.2 Dodge Magnum truck motor from a low-mileage pickup truck that I want to install into my '68 shortbed Sweptline truck. I want to know what it will take to get this engine into the truck. The truck originally had a 318, and I want to know if the motor mounts will bolt up. The truck I got the engine from had mounts to the side of the block, but the block seems to have the same ears as the old 318. I do not want to mess around with the electronics, and want to just run a carburetor. What intake manifold should I use? Will

the distributor from the old 318 work with the Magnum engine?

Before I swap in the Magnum, I want to hop it up to get around 350-375 hp. Can this be done without reworking the whole engine? What modifications would you recommend? I don't want to go crazy with it as the main reason I picked the 5.2 instead of the 5.9 was hoping to get better fuel economy.

PETE SANDERS

Pete, the Magnum engine should be a bolt-in. Fortunately, Chrysler kept the old LA-style mounting ears on the Magnum blocks, even though these engines used bosses on the side of the block to mount the engine. The distributor from your old 318 will drop right in, but I prefer to use a Chrysler electronic ignition instead of the points-style distributor. These are very easy to install. The Magnum does not accept a mechanical fuel pump, but the easy and cheapest solution here is a small electric pump.

You can add significantly to the power of the Magnum by upping the cam. The limitation here is the retainerto-guide clearance in the heads, which puts a limit on the lift to just over .500 inch. I would get the factory cam reground to put the specs in the range of 210 degrees duration at .050, and keep the lift under .500 inch. Remember that the rocker ratio in the Magnum is 1.6:1. which will give more lift than with an LA small-block's 1.5:1. You can keep the stock lifters and valvetrain. Add an Air-Gap intake, a good four-barrel carb, and a free-breathing exhaust, and you will be right around the power level you are targeting.

### GOT A TECHNICAL QUESTION YOU NEED HELP WITH?

Well, we're the guys to ask. Send your technical questions to us via www.moparmuscle.com, or send your questions to our Mopar Muscle email, jhunkins@enthusiastnetwork.com. If you're old school, snail mail your info to Mopar Muscle Magazine C/O Performance Clinic, 1733 Alton Pkwy. Suite 100, Irvine, CA 92606.



We Specialize Reproduction **Muscle Car Restoration Parts** 





We reproduce a wide range of new High Quality, like original Mopar and AMC muscle car parts. We use our own tooling and injection moulds. Reasonable price for retail and large quantity pricing,







Toll Free: 1-888-473-5855





### IT'S POSSIBLE, WITH THE RIGHT PARTS

POLYGRAPHITE STANDARD & SUPER FRONT END, KITS



### DISC BRAKE CONVERSIONS



SAVE BIG BUY KITS!

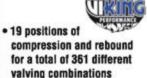
Featuring OEM Style Booster & Master Cylinders

### ADJUSTABLE TUBULAR UPPER CONTROL ARMS

- Tubular construction for weight savings and strength
- Eliminate poor alignment angle
- · Ideal for pro touring, street or drag builds
- Chrome Moly rods with Teflon inserts for frictionless movement



### DOUBLE ADJUSTABLE SHOCKS



- Lightweight aluminum construction
- 5/8" centerless ground, hard chrome plated piston rods
- Precision machined piston with PTFE/bronze piston wrap



### STEERING COLUMNS

- 8-Position Tilt
- 4-Way Flashers
- . Knob & Levers
- Self Canceling Turn Signals
- Collapsible Steering Column (certain models)

### LOWER CONTROL ARM REBUILD KIT



Smart buy for the budget minded performance build





ALSO AVAILABLE: STRUT RODS, ADJUSTING SLEEVES, BUSHING SETS, SWAY BARS, TORSION BARS, TRANSMISSION & MOTOR MOUNTS, FUEL TANKS, RADIATORS, WINDSHIELDS, KBS SOLUTIONS, POWER STEERING BOX. DROP SPINDLES, PIVOT SHAFTS AND MUCH MORE!



PERFORMANCE SUSPENSION TECHNOLOGY



SCAN & DRDER NOW

Call Today for PST's New FREE Catalog! 877-224-1710



ORDER TOLL FREE OR ONLINE

877-224-1710 www.p-s-t.com



